



BULLETIN No. 110

Index and List of Titles, Publications of the Fisheries Research Board of Canada, 1901-1954

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Bulletins of the Fisheries Research Board of Canada are published from time to time to present popular and scientific information concerning fishes and some other aquatic animals; their environment and the biology of their stocks; means of capture; and the handling, processing and utilizing of fish and fishery products.

In addition, the Board publishes the following:

An *Annual Report* of the work carried on under the direction of the Board.

The *Journal of the Fisheries Research Board of Canada*, containing the results of scientific investigations.

Atlantic Progress Reports, consisting of brief articles on investigations by the Atlantic stations of the Board.

Pacific Progress Reports, consisting of brief articles on investigations by the Pacific stations of the Board.

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For a complete list of the Board's publications, write to:

*Fisheries Research Board of Canada,
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FOREWORD

The subject-author index presented here has been prepared in response to requests for a guide to the published work of the Fisheries Research Board of Canada and of its predecessor, the Biological Board of Canada. Because of the rather large number of publications involved, the Board's Publications Committee considered that a really comprehensive index would be too great a task, but that an index based mainly on the *titles* of papers would have considerable value. However, during its compilation many entries covering specific information in their text and tables, but not mentioned in their titles, were included.

In addition to the names listed on the title page of this Bulletin, numerous employees of the Board have assisted with the index in one way or another. Dr. Lyle A. Swain, formerly of the Board's Technological Station in Vancouver, B.C., deserves special mention.

PUBLICATIONS INDEXED

The Index covers the following seven series of publications. A complete list of titles included in these, to the end of 1954, is given in the Appendix. Titles subsequent to 1954 in the continuing series are listed in the Annual Reports of the Board.

1. (a) CONTRIBUTIONS TO CANADIAN BIOLOGY.

Issues appeared with the following dates: 1901, 1902-05, 1906-10, 1911-14 (in two Fascicles), 1914-15, 1915-16, 1917-18, 1918-20, 1921 (in two Parts). Each issue contained several papers serially numbered.

(b) CONTRIBUTIONS TO CANADIAN BIOLOGY (NEW SERIES).

Beginning in 1922, the *Contributions* were grouped into volumes which were continuously paged, though composed of a number of separate issues. These issues were not numbered, but each separate paper carried a number. Two volumes appeared under this title, from 1922 to 1925.

(c) CONTRIBUTIONS TO CANADIAN BIOLOGY AND FISHERIES (NEW SERIES).

In 1926 the above change of name was made, but the sequence of volumes was not altered. Volumes III-VIII appeared under the new title, during 1926-34. Beginning with Volume VI, Nos. 11-12, the articles were grouped into four Series: A. General; B. Experimental; C. Industrial; and D. Hydrographic. However, the numbers assigned under these headings are best ignored in bibliographic citation, since they are additional to the regular numbered sequence of papers in each volume.

2. (a) JOURNAL OF THE BIOLOGICAL BOARD OF CANADA.

The *Journal* replaced the *Contributions* with the completion of Volume VIII of the latter. Three volumes of the *Journal* were issued under this name, in 1934-37. Each volume consisted of five numbered issues of about 100 pages each. Numbering of individual papers was discontinued, as was the grouping into the four Series above.

(b) JOURNAL OF THE FISHERIES RESEARCH BOARD OF CANADA.

This change in the name of the *Journal* followed on the change in name of the Board by Act of Parliament, but the numbering of volumes was not interrupted. The first issue under the new name appeared in 1938, and Volumes IV-XI were published during the years 1938-54. With Volume VI, the number of issues per volume was increased to 7; it was 10 in Volume VII, 7 in Volume VIII, 9 in Volume IX, 8 in Volume X, and 6 in Volume XI.

3. (a) BULLETINS OF THE BIOLOGICAL BOARD OF CANADA.

This series was begun in 1918, and 55 issues appeared under this name, to 1937.

(b) BULLETINS OF THE FISHERIES RESEARCH BOARD OF CANADA.

Bulletins 56-101 appeared under this name, during 1939-54.

4. (a) CANADIAN ATLANTIC FAUNA.

This series was begun in 1921. Five parts, numbered 3a; 9b; 10m; 10n; and 12d,e,f have appeared at irregular intervals, though not in the order shown, to the latest one in 1948.

(b) CANADIAN PACIFIC FAUNA.

This series was begun in 1937. Six parts, numbered 1a,b,c,d; 1e; 1f,g; 9b(1); 9b(2); and 10e have appeared at irregular intervals, though not in the order shown, to 1955.

5. STUDIES FROM THE BOARD'S STATIONS (reprints). (See also under 10.)

(a) STUDIES FROM THE BIOLOGICAL STATIONS OF THE BIOLOGICAL BOARD OF CANADA.

(b) STUDIES FROM THE BIOLOGICAL STATIONS OF THE FISHERIES RESEARCH BOARD OF CANADA.

(c) STUDIES FROM THE STATIONS OF THE FISHERIES RESEARCH BOARD OF CANADA.

Separates of articles embodying work done at the Board's Stations, published in journals other than the Board's own, have been collected under the *Studies* series listed above. The series was begun in 1919, each addition being numbered consecutively throughout the changes in name of the series. The number of copies obtained was not great and no general distribution was attempted until 1952, beginning with No. 327. A complete or nearly complete set of *Studies* is available in the libraries of most of the Board's Stations, and at its Headquarters in Ottawa. Studies No. 1-395 appeared to the end of 1954 and are included in this Index. Copies of *Studies* are not available for sale.

6. RESEARCH BULLETINS OF THE NEWFOUNDLAND GOVERNMENT LABORATORY.

The 18 Bulletins of this series were published from 1932 to 1948. This series and the next were discontinued at the time Newfoundland entered Confederation in 1949. They are included in the present Index because the Fisheries Research Board of Canada can be considered the successor in interest to the fisheries research work done by the Newfoundland Government Laboratory prior to 1949.

7. SERVICE BULLETINS OF THE NEWFOUNDLAND GOVERNMENT LABORATORY.

The 15 Bulletins of this series are dated from 1935 to 1940.

REPORTS NOT INDEXED

The series of publications listed above comprise a major part of the published work of the Fisheries Research Board and its predecessor the Biological Board, but not all of it. Series *not* included in this Index are described briefly below.

8. *Annual Reports* of the Board's work, published first for the year 1925, and annually since. (Listed on page 165 of Appendix.)

9. Two series of *Progress Reports* are published approximately quarterly concerning the work done at the Board's Atlantic and Pacific Stations. These series commenced in 1931 and 1929, respectively.

(a) *Progress Reports of the Atlantic Coast Stations* (titles on pages 167-180 of Appendix)—indexes in issues No. 16, 20, 27, 33, 53 and 60.

(b) *Progress Reports of the Pacific Coast Stations* (titles on pages 181-209 of Appendix)—indexes in issues No. 60, 80 and 100.

10. The *Studies* series described under 5 was begun only in 1919. Titles of papers which appeared prior to 1919 are included in a list of publications for the years 1901-21, which appeared in Contributions to Canadian Biology for 1921, No. 12, pages 169-183. Even since 1919, some papers have been omitted from the *Studies*, either through inadvertence or because their interest was considered to be too local or too fleeting. Titles of most of these may be found in a list of publications for 1922-30, published in the Board's Bulletin No. 28, and in the lists of publications included in each year's printed Annual Report.

11. Other sources of information concerning the Board's work include the *Circulars* and *Industrial Memoranda* which have been issued by several of the Stations, and the *Manuscript Reports* which are prepared for use within the organization. Titles of these are listed each year in the Annual Report.

PLAN OF THE INDEX

The Index has been prepared mainly from the titles of the articles, with some reference to the abstracts, subheadings and conclusions. With the biological papers, the aim has been to list the main references to species and localities, and the kind of information obtained. Technological subjects are listed under the type of process concerned and the kind of product involved, as well as the fisheries source material.

Names of authors and co-authors of papers are also included in the Index.

NAMES OF FISHES, BIRDS AND MAMMALS. For papers where only a few different species are mentioned, entries have been made under each species. For the biological papers that mention many species, entries have been made under one of the general headings such as Fauna; Distribution of fish; Birds.

When a single species of fish has a large number of entries, they have been divided between the subheadings "biology" and "technology". With species having fewer entries, technological references are usually indicated by a descriptive word in brackets after the page number.

References have been listed under the common English name of the fish; where there are variants, the name selected for Pacific species has usually been that used in the Board's Bulletin No. 68, while for Atlantic or freshwater fishes we have usually used the name recommended by the latest revision of the American Fisheries Society's list of approved names. In all cases the American Fisheries Society name is cross-indexed (hyphens have been dropped from a few). Scientific names are listed, but only by a reference to the English name (except that *single* entries are repeated under the scientific name).

In some technological papers only a collective name for the fish in question is given; these entries appear after the individual species names: e.g., *Skates* appears at the end of the list of all the particular kinds of skates.

NAMES OF OTHER ORGANISMS. Commercial species appear under their common English name (e.g., *Clams*, *Irish moss*, etc.). Most other organisms appear under the name of the Order, Sub-order or Family in which they are classified. The groups so listed are indicated in brackets after the name of a more general term, e.g., *Molluscs*; *Bivalves*; etc.

GEOGRAPHICAL REFERENCES. Only the references to well-known geographical localities are listed, or those places where a great deal of biological investigation has been done. A note concerning the main purport of the paper is added to each geographical entry. Under the names of the Provinces reference is made only to those papers in which no particular locality is specified, or in which the locality is not sufficiently well known to warrant a separate entry.

PHYSICS AND CHEMISTRY OF NATURAL WATERS. Papers dealing with the composition or properties of sea water, the distribution of water masses, currents, tides, etc., appear under the headings *Oceanography* or *Currents*. Similar papers for inland waters appear under *Limnology*.

FISHERIES AND FISH POPULATION BIOLOGY. These topics are listed under one or more of the following headings: *Abundance*; *Age composition*; *Catch per unit effort*; *Catchability*; *Depletion*; *Exploitation*; *Food studies*; *Growth rate*; *Management*; *Mortality*; *Statistics*; *Surveys*; *Tagging*. Each entry is followed by an indication of the kinds of fish involved.

SUBDIVISION OF HEADINGS. Headings under which there are many entries have been subdivided. Examples are: *Bacteria*; *Chemical composition*; *Disease*; *Distribution*; *Limnology*; *Oceanography*; *Oil*; *Physiology*; etc.

ABBREVIATIONS

For distinguishing in the Index the various series of publications, initials are used as follows:

- C: Contributions
- J: Journal
- B: Bulletins
- AF: Canadian Atlantic Fauna
- PF: Canadian Pacific Fauna
- S: Studies
- NR: Newfoundland Research Bulletins
- NS: Newfoundland Service Bulletins

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A

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 B68: 103

Bathylagus pacificus
 B68: 102

Bathymaster signatus
 B68: 156

BATTLE, HELEN IRENE
 C4: 495, 501; C5: 107, 361; C7: 255
 J1: 145; J2: 401; J6: 252
 S33; S271

BAUMANN, EMIL JACOB
 C1918-20: 133

BAY OF FUNDY (*see also* Passamaquoddy Bay)
 C1901: 52 (sea urchin), 59 (sardine);
 C1911-14(1): 11 (diatoms), 39 (caprellid)
 69 (parasitic copepods); C1914-15: 163

(oceanography); C1915-16: 93 (phytoplankton); C1917-18: 111 (pollock), 127 (oceanography); C1921: 49 (fishes); C1: 101, 353 (water circulation); C3: 423 (haddock); C7: 73 (oceanography)

J1: 121, 171 (oceanography), 279 (phytoplankton); J2: 41 (lobsters), 141 (oceanography); J3: 189 (zooplankton); J6: 472 (Polychaeta); J7: 490 (shellfish poisoning); J10: 1 (herring), 97 (oceanography); J11: 32, 42, 407, 428 (oceanography)

B51: 9 (salmon)

S1 (Isopoda); S43 (light penetration); S203 (rare fishes and salps)

BAYLISS, L. E.
S100

BEALL, DESMOND
J3: 177; J4: 478
B35

BEATTY, STANLEY ALBERT
C8: 531
J3: 77; J4: 63, 229, 412; J5: 32, 203

BEAVER L., B.C. (see Okanagan lakes)

BEDFORD, ROBERT H.
C6: 417, 423; C7: 139, 425, 431
B29; B49
S156

BEETLES (see Insects, aquatic)

BEHAVIOUR (see also Reactions)
J8: 241; J11: 69 (Pacific salmon)

BELL, HUGH PHILIP
C8: 63
S46

BELL, JOHN MILTON
B92

BELLE ISLE, STRAIT OF (see Strait of Belle Isle)

BELUGA
B59: 416, B89: 353 (oil); B94: 25; B98

BENSLEY, BENJAMIN ARTHUR
C1901: 59; C1911-14(2): 1

BENSON, CLARA CYNTHIA
C1: 401
S63

Benthodesmus atlanticus
B68: 160

BENTHOS (see Bottom fauna)

BENZOIC ACID
J4: 327

Berardius bairdi
S348

BERE, RUBY
C4: 175; C5: 423

BERKELEY, ALFREDA ALICE (see also Needler, A. B.)
C3: 317; C6: 79
S93

BERKELEY, CYRIL J.
C1: 71; C2: 503; C6: 13; C7: 309
J6: 129; J8: 488; J10: 85; J11: 326, 454
PF9b(1); PF9b(2)
S10; S13; S14; S16; S22; S106; S153;
S181; S199; S307; S320; S353

BERKELEY, EDITH
C1: 203; C2: 285; C3: 405; C4: 305;
C6: 65; C7: 309;
J6: 129; J8: 488; J10: 85; J11: 326, 454
PF9b(1); PF9b(2)
S65; S153; S181; S199; S307; S320; S353

BERMUDA
J7: 363 (*Odontosyllis*)

BERRILL, NORMAN JOHN
C4: 143
S60; S78; S95

BEVERIDGE, JAMES MACDONALD RICHARDSON
J7: 35, 51, 74

BIAPOCRISIS (see also Growth rate; Mortality; Reactions)
S289

BIDEFORD R., P.E.I.
J4: 287 (oyster larvae); J5: 236 (oceanography)

BIELY, JACOB
S373

BIGELOW, HENRY B.
AF12d,e,f

BIGELOW, N. K.
C1921: 87

BILE
S70

BIOASSAY
J11: 58 (goldfish, rats), 64 (chicks)

BIOLUMINESCENCE
J9: 223

BIOMETRY (*see* Size)

BIRDS (*see also* Predators)
C1: 291 (near Nanaimo)
J2: 299, J3: 323 (kingfishers and mergansers); J4: 48 (kingfishers), 309 (mergansers); J5: 227 (effect on salmon)
B17 (waterfowl); B55 (mergansers); B58 (effect on salmon); B97 (kingfishers)
S212 (mergansers); S216 (kingfishers); S224 (ducks and coots); S301 (gulls)

BISSET, HELEN MARY
S337; S374; S375

BISSONNETTE, THOMAS HUME
C1911-14(2): 213

BIVALVES (*see also* Clams; Mussels; Oysters)
C1906-10: 221; C4: 397; C7: 255
B77

BLACK, EDGAR CLARK
J10: 196
B80

BLACK, VIRGINIA SAFFORD
J8: 164

BLACK SMELT, BIG-SCALED (*Bathylagus milleri*)
B68: 103

BLACK SMELT, SLENDER (*Bathylagus pacificus*)
B68: 102

BLACKCOD (*Anoplopoma fimbria*)
J4: 327, 472 (oil); J7: 138; J8: 377
B37; 147; B59: 402 (oil); B68: 239; B89: 337 (oil)
S13; S394

BLACKFISH, ALASKA
B94: 19

BLAIR, ARTHUR AVERY
J1: 159; J5: 440
S173
NR12; NR13

BLENNY (Y-BLENNY)
C7: 319
B68: 185

BLENNY, BLACK
B68: 176

BLENNY, BELTED
B68: 174

BLENNY, BRACKETED
B68: 180

BLENNY, BURROWING
B68: 198

BLENNY, CRESTED
B68: 183

BLENNY, DECORATED
B68: 178

BLENNY, FUCUS
B68: 181

BLENNY, LONG-SNOUTED
B68: 188

BLENNY, ORNAMENTED
B68: 177

BLENNY, PEN-POINT
B68: 181

BLENNY, ROCK
B68: 175

BLENNY, SADDLED
B68: 179

BLENNY, WHITE-BARRED
B68: 187

Blepsias cirrhosus
B68: 245

BLUEGILL
J11: 608

BLOOD (*see also* Physiology-circulatory system)
C5: 475; C6: 341
J6: 72, 152
S26; S34; S59

BOAR'S BACK L., N.S.
S206 (fish populations); S229 (poison)

BOCACCIO
B68: 206; B89: 338 (oil)

BODY OILS, PRODUCTION OF
B37: 55; B59: 222; B89: 199

BODY PROPORTIONS (*see* Size)

BODYING (*see also* Oil, processing)
C8: 321 (pilchard oil)

BOLTON, LLOYD LAWRENCE
B16
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BOLTON, REGINALD SPENCE
J4: 162

BONITO, ATLANTIC
S226

BONITO, PACIFIC
B68: 164

Boreogadus saida (*see* Cod, polar)

BORERS (*see* Gribble; Shipworms)

Bothragonus strani
B68: 288

Bothrocara mollis
B68: 194

BOTTOM FAUNA
C5: 381 (Manitoban lakes)
J6: 133 (Cowichan R., B.C.); J8: 383 (Charlotte County lakes, N.B.); J9: 204 (Cultus L., B.C.), 417 (Cowichan L., B.C.); J10: 486 (Great Slave L., N.W.T.); J11: 637 (Port John L., B.C.)
B42: 9 (Paul L., B.C.), 24 (Pinantan L., B.C.), 26 (Penask L., B.C.), 28 (Fish L., B.C.), 29 (Nicola L., B.C.); B56: 17, 64 (Okanagan lakes, B.C.); B72: 36 (Great Bear L., N.W.T.), 54 (Great Slave L., N.W.T.), 74 (L. Athabaska, Alta.)

BOUGHTON, REX VIVIAN
S254; S260

BOUSFIELD, EDWARD LLOYD
J8: 134

BOWFIN
B7: 18 (insulin)

BOWIE, D. J.
C8: 207
S57

BOYD, JOHN WILLIAM
S375

BOYD, SADIE N.
C1921: 125

BOYLAND, ERIC
S100

BRAARUD, TRYGVE
J1: 279

Brachyistius brevipinnis
B68: 148

BRACHYURA (*see* Crabs)

Brama rassi
B68: 143

BRETT, JOHN ROLAND
J8: 82, 103, 178, 453; J9: 265; J10: 548;
J11: 310
S356

BRILL (*Eopsetta*)
J8: 77
B68: 316

BRITISH COLUMBIA (*see also* individual localities)
C1906-10: 103 (ascidians), 187 (decapod crustaceans); C1914-15: 1 (halibut), 25, 169 (kelp), 133 (oceanography); C1917-18: 5 (sea lions); C1: 95 (hydroids); C2: 469 (Cirripedia), 503 (kelps), 507 (Rhizopoda and Heliozoa), 519 (Desmidieae); C4: 9 (oceanography and wood-borers); C6: 79 (pandalids), 391 (trout); C7: 213 (Protozoa), 221 (Cestoda), 245 (pilchard food), 319 (blennies); C8: 103 (furunculosis), 237 (Hippolytidae larvae)
J1: 469 (barnacles), 477 (Pacific herring); J3: 108, 145 (herring); J4: 233 (pink salmon), 478 (herring); J5: 474 (herring); J6: 164 (pilchard); J8: 374 (bottom fishes); J9: 42 (currents in Loudoun channel), 141 (smooth lump sucker), 143 (*Pallasina barbata aix*), 450 (pink and chum salmon); J10: 125 (oceanography), 320 (humpback)

whales); J11: 48 (oceanography); 267 (parasites of marine mammals), 319 (whale lice), 326, 454 (Polychaeta), 335 (*Sebastodes rubrivinctus*), 673 (fish parasites)

B14, B31, B90 (pink and chum salmon); B17 (waterfowl and herring); B32 (game fish); B34 (oysters); B36, B38, B39 (pilchard fishery); B40 (coho salmon); B41 (spring salmon); B42 (Kamloop lakes); B47 (herring); B53 (sockeye salmon); B54 (lingcod); B56 (Okanagan lakes); B64 (smelts); B65 (spring and coho salmon); B67 (herring catch); B74 (pink salmon); B80 (wood-borers); B91 (crab); B93 (harbour seal)

S6 (*Sagitta*); S19 (wood-borers); S28 (Protozoa); S64 (decapod Crustacea); S72 (little-neck clams); S76 (Dinoflagellata and Protozoa); S85 (trout); S88 (marine ciliates); S98 (zooplankton); S120 (pilchard); S123 (fiords); S126 (Pycnogonida); S129 (salmon); S131 (brown trout); S133 (crabs); S144 (freshwater fishes); S146, S171, S193, S221, S240, S247, S254, S260 (herring); S169 (Anomura); S176, S196, S220, S239, S246, S253, S261, (pilchards); S212 (mergansers); S227 (waterfowl); S238 (clams); S290 (fishes collected from the *Wm. J. Stewart*); S334 (recreation facilities); S348 (whales)

BRITTON, SYDNEY WILLIAM
C1: 413

BROCKLESBY, HORACE NICHOLAS
C6: 365; C7: 413, 505, 521; C8: 321
J1: 487; J2: 13; J4: 59, 174
B37; B46; B59
S55; S86; S87; S97; S150; S151; S152

Brosme brosme (see Cusk)

Bromophycis marginatus
B68: 200

BROTULID, RED
B68: 200

BROWNING (MAILLARD REACTION)
J8: 74
S351; S360

BRUMWELL, CHARLES ALEXANDER
S377

BRYOZOA
C1902-05: 75; C1911-14(2): 195; C1: 143; C3: 47, 247; C7: 361

BUFFER SPECIES
J8: 103

BULB-FISH
B68: 338

BULLHEAD (*Leptocottus armatus*, see Cabezon; *Cottus asper*, see Sculpin)

BULLHEAD, BROWN (*Ameiurus nebulosus*)
J10: 62
S34; S144; S213

BULLHEAD, COMMON (see Bullhead, brown)

BULLHEAD, PRICKLY (see Sculpin)

BURBOT
B55: 41; B56: 38; B72: 41; B94: 23
S101; S144

BURWASH, EDWARD MOORE
C1906-10: 295

BURWASH, FRANCES M.
C4: 115

BUTLER, TERRANCE HENRY
S387

BUTTERFISH
S41: 31 (bacteria); S184; S226; S234

BY-PRODUCTS OF FISHERIES (see also Feedstuffs; Fertilizer; Fish meal; Glue; Marketing; Oil)
C8: 531 (artificial horn from muscle)
S299 (possible developments); S332 (handling products)
NS5: 5 (dogfish)

C

CABEZON
B68: 256
S81 (creatine); S82 (arginase)

Calanus (see Copepoda)

“CALANUS” SERIES (PAPERS)
J9: 65, 83; J10: 326; J11: 98, 507, 709

Callorhinus (see Seals, fur)

CAMERON, ALEXANDER THOMAS
C1911-14(1): 51; C1914-15: 25, 133, 169; C1: 39, 73
J6: 204; J7: 216
B72
S8

CAMPBELL, JAMES

J1: 179

CAMPBELL, MILDRED HELENA

J1: 1

S80

CANADIAN FISHERIES EXPEDITION (see Surveys)

Cancer amoenus, *C. borealis*, *C. magister* (see Crab)

CANNING

C1917-18: 181; C1918-20: 103 (sardines), 125 (dogfish); C1921: 1 (clams); C2: 1, C5: 93 (lobsters); C6: 377 (haddock)

J2: 431, 439, 463, 473 (salmon), 457 (pilchard), 469 (salmon and pilchard); J3: 100 (mackerel, cod, tuna, lobster); J4: 55 (pilchard), 162 (salmon); JS: 344 (crabs, shrimps, clams); J6: 183 (lobster), 309 (lingcod and salmon); J7: 65 (sardines, mackerel), 116 (herring)

B6, B8, B43 (lobster); B24 (mackerel); B36: 21 (pilchards); B47: 22 (herring); B59: 425 (changes in oil); B89: 273 (oils used); B90: 7 (salmon); B91: 10 (crab)

S162 (salmon)

NR11: 19 (lobster)

NS2: 6, NS15: 30 (lobster); NS13 (methods)

CANSO, N.S.

C1902-05: 55 (Diatomaceae), 59 (flora), 71 (seaweeds), 75 (Polypora), 81 (fishes)

J11: 409 (bottom temperature of Canso Bank)

CAPE BRETON, N.S.

C1918-20: 109 (list of fishes)

J2: 355 (*Argulus canadensis*)

CAPELIN (CAPLIN), ATLANTIC

J7: 200; J11: 251

S379A

NR2; NR17

CAPELIN, PACIFIC

J3: 417

B64: 20; B68: 97

Carassius auratus (see Goldfish)

CARBOHYDRATES

J2: 477 (in oysters); J4: 412 (breakdown during spoilage); J6: 45, 441 (glucose); J8: 74 (Maillard reaction); J10: 521 (in lobster shell), 583 (in crab shell)

S13 (pentose); S14 (in Polychaeta); S16 (glycogen in molluscs); S22 (in lingcod liver); S186 (test for glycogen); S273, S274 (in seaweed); S351 (Maillard reaction)

CARBON DIOXIDE

J6: 435; J7: 238

CARBONYL ENEDIOLS

J7: 522

CARDIN, AIMÉ

J7: 471; J8: 189

Cardium corbis (see Clams)

Careproctus gilberti

B68: 303

Careproctus melanurus (see Liparid, black-tailed)

Careproctus origerum

B68: 302

CARL, GEORGE CLIFFORD

J3: 20; J9: 417

S170; S228; S231

CARP

B56: 33

S144

CARRAGEEN

S273; S274

CARTER, NEAL MARSHALL

J2: 439; J6: 63

B89

S123; S172; S189; S197; S305

CASTELL, CHARLES HOWELL

J6: 491; J7: 55, 62, 70, 162, 370, 378, 421, 430, 528, 536, 561, 567; J8: 111, 195; J9: 148, 377

B100

CATCH PER UNIT EFFORT (see also Abundance)

J5: 43 (relation to abundance and exploitation); J7: 177 (lake trout); J10: 459 (lemon sole)

B4: 10 (muttonfish); B38: 6 (pilchard); B43: 9 (lobster); B67: 22 (herring); B82: 2 (coregonine fish)

S238 (clams); S251 (trout in Paul Lake, B.C.); S255 (butter clams); S262, S286 (B.C. clams); S285, S378 (B.C. herring); S296 (relation to abundance); S318, S321 (speckled trout, P.E.I.); S394 (black cod) NR6: 9 (lobster) NS15: 36 (lobster)

CATCHABILITY

J6: 291 (lobsters); J10: 474; J11: 284 (white-fish), 827 (lake trout)

CATFISH, BROAD-HEADED

S235

CATFISH, FRESHWATER (see Bullhead, brown)

CATOSTOMIDAE (see Suckers)

Catostomus catostomus (see Sucker, longnose)

Catostomus commersoni (see Sucker, white)

Catostomus macrocheilus (see Sucker, Columbia large-scaled)

CELLULOSE

S377

CESTODA (tapeworms; *see also* *Triaenophorus*) C1911-14(2): 177; C7: 221, 377; C8: 77, 89, 99
J7: 186; J11: 267, 673, 884
B45

CETACEA (see Whales)

Cetorhinus maximus (see Shark, basking)

CHAETOPODA (see Annelida)

CHAGNON, E.C.

J11: 130

CHAISSON, ARTHUR FRANCIS

C5: 475; C7: 67
J1: 251
B33

Chalinura filifera
B68: 135

CHAMCOOK L., N.B.

C5: 457 (*Eupomotis gibbosus*)
S43 (light penetration); S173 (salmon)

CHAR, ARCTIC

J9: 1; J10: 326; J11: 904
B72: 90; B79: 1
S326; S329

CHAR, DOLLY VARDEN

B32: 37; B68: 94
S144; S148; S263

CHAR, HYBRID

J11: 652, 904

CHAR, SPECKLED (*Salvelinus fontinalis*)

C2: 135; C3: 365; C5: 203
J2: 299; J3: 323; J4: 48, 302, 491; J5: 176, 258, 461, 471, 485; J6: 24, 90; J8: 383; J9: 169; J10: 62, 187; J11: 153, 255, 904
B32: 40; B68: 95; B79
S101; S140; S144; S187; S205; S213; S234; S263; S318; S321; S341; S384; S385
NR9
NS6: 4

CHARLOTTE COUNTY LAKES, N.B.

J8: 383 (trout)

CHARNLEY, FRANK

C7: 521; C8: 507
J2: 285; J4: 162

CHASTEK PARALYSIS

J11: 529 (in fish)
B92 (in mink)

CHATHAM SOUND, B.C.

S345 (oceanography)

CHATWIN, BRUCE MCLEOD

B96

Chauliodus macouni (see Viperfish, fanged)

Chauliodus sloanei
S226

CHEMICAL ANALYSIS

C1901: 15 (polluted water); C7: 119 (silica)
J7: 389 (chromatography of oil constituents);
J8: 309 (trimethylamine oxide); J10: 521, 583 (chitin)
S13 (pentose in marine animal tissues);
S23 (colorimetric determination of urea);
S241 (recovery of silver nitrate); S265 (reagent dispenser); S331 (partition chromatography of aliphatic acids); S350 (isomerization)

CHEMICAL COMPOSITION (OF FRESH FISH—see also Amino acids; Nutritive value; Vitamins)
C1918-20: 125 (selachian muscle); C3: 437, 457 (fish muscle); C6: 341 (creatine in dogfish); C8: 123, 131 (non-protein nitrogen)

J1: 179 (non-protein nitrogen); J2: 461 (lingcod), 469, 473 (mineral constituents)
J4: 363 (histidine compound in mackerel and tuna muscle), 478 (herring); J7: 51 (sulphur in muscle proteins), 563 (of B.C. fish and constituents), 608 (acid soluble phosphorus); J8: 164 (changes in chum and coho fry), 314 (trimethylamine oxide); J10: 590 (enzymes from pyloric caeca of redfish)
S17 (insulin); S22, S25, S82 (arginase); S38, S40, S52 (changes caused by death); S59 (dogfish blood); S63 (pH); S81 (creatine); S150, S151, S152 (fatty acids and esters); S156 (effect of cold storage); S222 (use of chemical preservatives)

CHEMICAL COMPOSITION (OF FISH WASTES)

C7: 169
J3: 177

CHEMICAL COMPOSITION (OF INVERTEBRATES)

C1902-05: 121 (medusae); C1921: 125 (lobsters)
J2: 477 (oysters); J6: 152 (phosphorus in lobster); J10: 521 (chitin from lobster shell), 583 (chitin from crab shell)
B6: 4 (lobster)
S10, S14 (annelids); S186 (glycogen in oysters)

CHEMICAL COMPOSITION (OF PLANTS)

C1914-15: 25, 169; C2: 503
J10: 283

CHEMICAL COMPOSITION (OF PROCESSED FISH, ETC.)

C1918-20: 133 (canned grayfish)
J2: 439 (canned sockeye and pink salmon), 457 (canned pilchard), 463 (canned coho salmon); J5: 344 (canned crabs, shrimps and clams); J6: 183 (crystals in canned lobster), 303 (dehydrated fish), 338 (smoke constituents)
NS11: 11 (fish meal)

CHEMICAL COMPOSITION OF WATER (see Limnology; Oceanography)

CHEMISTRY, GENERAL
B11; B37: 13; B59: 13; B89: 3

CHEMISTRY OF OILS (see also Oil, chemical reactions)
B37; B46: 7; B59: 13; B89: 18

CHETICAMP R., N.S.
C3: 323 (hydroids); C5: 219 (amphipods)
S333 (salmon)

CHIMAEROIDS
AF12f

CHIMAERA, SHORT-FINNED
S226

CHINOOK SALMON (see Salmon, spring)

CHIPMAN, H. RITCHIE
B11; B52
S101

Chirolophis galerita
B73: 10

Chirolophis nugator
B68: 177

Chirolophis polyactocephalus
B68: 178

CHIRONOMIDAE (midges) (see also Insects, aquatic)
J2: 209; J9: 204

Chiropsis decagrammus
B68: 231

CHITIN, CHITOSANS
J10: 521, 583

Chitonotus pugelensis
B68: 252

CHLORIDE, SECRETION OF
J1: 497

CHLORINITY, CONVERSION OF
S172 (graphical method)

CHLORTETRACYCLINE (see Antibiotics)

CHOLINE
J7: 17

Chondrus crispus (see Irish moss)

CHORDATA
AF12d,e,f (lampreys, sharks and rays, chimaeroids)

CHROMOSOMES
 J11: 927 (in salmonoid fishes)

Chrosomus erythrogaster
 S144

CHUB, CREEK (*Semotilus atromaculatus*)
 J11: 130
 S213

CHUB, LAKE (*Cousesius plumbeus*)
 S144

CHUB (*Mylocheilus caurinum*—see Peamouth)

CHUM SALMON (see Salmon, chum)

CILIATA (PROTOZOA)
 PF1f

CIRCULATION (of water, see Currents; of blood, see Physiology)

CIRRIPEDIA (see also Barnacles)
 PF10e

CISCOES
 C1921: 73, 87; C5: 467; C6: 198, 225
 C7: 325, 342; C8: 8
 J5: 428; J6: 334; J8: 469; J10: 51
 B72: 39, 59, 78; B82; B92: 6; B94: 10
 S144

Citharichthys sordidus (see Dab, mottled sand)

Citharichthys stigmaeus (see Dab, speckled sand)

CITRIC ACID
 J4: 355; J5: 122

CLADOCERA (CRUSTACEANS)
 C4: 107
 J5: 138; J11: 244, 596
 S50; S104; S185

CLAMS, ATLANTIC (BIOLOGY)
 C1901: 19; C1906-10: 29, 217; C1914-15:
 73; C4: 81
 J7: 219, 545
 B77: 10
 S7; S279

CLAMS, PACIFIC (BIOLOGY)
 J4: 53; J6: 140; J8: 369
 S16; S72; S73; S74; S238; S245; S255;
 S262; S286

CLAMS (TECHNOLOGY)
 C1921: 1 (canned); C4: 95, 227
 J5: 344 (canned)
 B75: 1 (toxic)
 S13

CLARK, AUSTIN HOBART
 C1: 21
 J3: 350

CLARK, HUBERT LYMAN
 C1: 25

CLASPERS (OF SKATE)
 J1: 261

CLEMENS, LUCY SMITH
 C1918-20: 69
 S145

CLEMENS, WILBERT AMIE
 C1911-14(2): 113, 131; C1918-20: 69;
 C1921: 73, 87
 J7: 215; J9: 141
 B15; B17; B26; B27; B55; B56; B68
 S77; S90; S91; S92; S107; S113; S115;
 S118; S122; S134; S145; S160; S179;
 S195; S197; S212; S219; S233

Clevelandia ios
 B68: 169

CLIMATE (see Weather)

CLING-FISH, COMMON
 B68: 334

CLING-FISH, SLENDER
 B68: 335

Clinocottus acuticeps
 B68: 273

Clinocottus embryum
 B68: 272

Clinocottus globiceps
 B68: 271

Clostridium (see Bacteria; Spoilage)

Clupea harengus (see Herring, Atlantic)

Clupea pallasi (see Herring, Pacific)

CLUPEIDAE (see also Alewife; Herring; Shad)
 C1902-05: 95

COD, ALASKA (*see* Blackcod)

COD, ATLANTIC (BIOLOGY)
 C1906-10: 23; C1914-15: 103; C4: 287;
 C8: 433
 J5: 105; J10: 539; J11: 251, 894
 B18; B61
 S234; S329; S354; S379A
 NR4: 13; NR14
 NS8: 14

COD, ATLANTIC (TECHNOLOGY)
 C3: 469; C8: 227, 275, 291
 J1: 179; J3: 2, 77, 102, 439, 473; J4: 63,
 252, 355, 412; J5: 32, 197, 203, 221, 276,
 287; J6: 1, 45, 53, 359, 380, 403, 441, 491;
 J7: 70, 128, 370, 378, 421, 430, 449, 461,
 528, 536, 580, 585; J8: 111, 325; J9: 129,
 148, 388; J11: 261, 355
 B7: 7; B9; B59: 395, B89: 331 (oil)
 S38; S41; S52; S101; S324; S349 (oil)
 NS1, NS3 (oil); NS4; NS9

COD, BLACK (*see* Blackcod)

COD, GRAY (*see* Cod, Pacific)

COD, GREENLAND (*Gadus ogac*)
 J11: 247
 S336

COD, LING (*see* Lingcod)

COD, LONG-FINNED
 B68: 133

COD, PACIFIC (BIOLOGY) (*Gadus macrocephalus*)
 J8: 377
 B68: 132

COD, PACIFIC (TECHNOLOGY)
 J4: 367 (trimethylamine), 405 (oil); J7: 552
 (peptones from flesh)
 B37: 148, B89: 335 (oil)

COD, PILOT
 J11: 248

COD, POLAR
 J11: 248
 B73: 2

COD, RED (*see* Rockfishes)

COD, ROCK (*see* Rockfishes)

CODWORM (*Porrocaecum*)
 J10: 539; J11: 894

COELENTERATA (HYDROIDA)
 AF3a

COHO (*see* Salmon, coho)

COLD STORAGE (*see also* Refrigeration)
 C7: 495

COLLECTORS (FOR OYSTER SPAT)
 B22: 21; B34: 16; B48; B60: 20

COLLINS, VERNON KIRKPATRICK
 J4: 412; J5: 32, 197, 203

COLLIP, JAMES BERTRAM
 S7

Cololabis saira
 B68: 123

COLORIMETRY
 C7: 119
 J2: 1; J6: 351, 414; J7: 576, 594

COLOUR (*see* Pigment)

COMMENSALISM
 J7: 219

COMPETITION, IN POPULATIONS
 J10: 211

CONNELL, ROBERT
 S61

CONNELL, WALTER THOMAS
 C1902-05: 53

CONNOLLY, CORNELIUS JOSEPH
 C1921: 113; C1: 335; C2: 327
 B3
 S94

COOKE, NORMAN EDWARD
 J7: 522; J8: 117

COOPER, ARTHUR REUBEN
 C1911-14(2): 177

COOPER, DOUGLAS LeBARON
 J3: 1, 100; J4: 136
 S135

COPELAND, G. G.
 C1906-10: 281

COPEPODA, FREE-LIVING
 C1917-18: 217; C1: 303; C4: 527; C5: 83;
 C6: 483
 J1: 1; J3: 12; J5: 365; J11: 240
 B15: 7
 S3; S50; S79; S124; S312

COPEPODA, PARASITIC
 C1906-10: 85; C1911-14(1): 69; C1917-18:
 171; C3: 235; C5: 80, 423; C6: 215
 J2: 355; J5: 172; J6: 24; J7: 505; J11: 267,
 673, 816
 S2; S94
 NR 16: 39

COPPER SULPHATE (*see* Poisons)

CORACIDIA (*see* Cestoda)

COREGONIDAE (*see* Ciscoes; Lake whitefish;
Prosopium)

Coregonus clupeaformis (*see* Lake whitefish)

CORNISH, GEORGE A.
 C1902-05: 75, 81; C1906-10: 79

CORNWALL, IRA EDMOND
 C2: 469; C3: 501; C5: 213
 J1: 469; J10: 76
 PF10e

CORROSION (PREVENTION)
 J7: 101, 116 (cans)

COTTIDAE (*see also* Sculpins; Cabezon)
 C1906-10: 215
 B68: 242; B94: 21
 S81; S82; S148

Cottus aleuticus
 S144

Cottus asper (*see* Sculpin, prickly)

Cottus cognatus
 S144

Cottus rhothea
 S144

Couesius plumbeus
 S144

COULTHARD, H.S.
 C4: 121

COWICHAN L., B.C.
 J9: 417 (limnobiology)

COWICHAN R., B.C.
 J5: 448 (trout); J6: 133 (bottom fauna)
 B84 (game fish)

COX, PHILIP
 C1914-15: 73, 81, 115; C1918-20: 109;
 C1921: 151; C1: 1, 409
 J5: 1
 B2

CRABS
 C1: 335; C2: 327; C7: 335
 J1: 191; J5: 344
 B30; B62; B91
 AF10m (Atlantic)
 S5; S64; S133; S142

CRAB, HERMIT
 S169

CRAIGIE, EDWARD HORNE
 C1914-15: 87, 145, 151, 163; C1917-18: 127;
 C3: 489
 S42; S47; S53; S54; S66

CRAPPIE, BLACK
 S144

Crassostrea (*see* *Ostrea*)

CRAW, C. HELEN
 S51

CREATINE
 C6: 343

CRECY L., N.B.
 S297, S341 (fertilization); S385 (creel census)

CREEL CENSUS
 J8: 383; J11: 5
 S385 (Crecy Lake)

Cristivomer namaycush (*see* Trout, lake)

CRUISING SPEED (OF FISHES)
 J7: 169, 432; J8: 67; J11: 153

CRUSTACEANS (*see also* Entomostraca, Malacostraca)
 C1906-10: 83, 187; C1911-14(1): 39;
 C1911-14(2): 145
 J9: 164
 S64

Cryptacanthodes maculatus

S5: 4

CRYSTALS, GLASS-LIKE

J6: 183 (in canned lobster)

CTENOPHORA (COMB-JELLIES)

C6: 13

J11: 240

S110

CULTURE (OF OYSTERS AND OTHER INVERTEBRATES)

C1906-10: 217, C1915-16: 53 (oysters); C1911-14(2): 13 (mayflies); C1914-15: 41, C1915-16: 11, C1917-18: 53 (lobsters); C1917-18: 75 (mussels)

B22: 17, B34: 17, B48, B60 (oysters)

S132 (oysters)

CULTURES (OF MICROORGANISMS)

C1918-20: 63 (diatoms); C8: 459 (bacteria); J7: 162, 430 (*Pseudomonas*), 552 (bacteria); J9: 148 (*Flavobacterium*), 157 (bacteria); J10: 62 (bacteria)

CULTUS L., B.C.

C2: 345 (ecology of sockeye); C5: 3, 37, 55, C8: 345 (life of sockeye)

J2: 311 (sockeye); J3: 363 (physical limnology), 450 (natural food of sockeye); J4: 19 (sampling plankton), 33 (net plankton), 151 (sockeye propagation), 184 (young sockeye mortality), 192 (kokanee and residual sockeye); J5: 293, 315 (predators of sockeye); J6: 267 (size of young sockeye relative to density); J7: 88 (sea-run and landlocked sockeye); J9: 204 (benthos); J10: 293 (coho); J11: 339 (adult sockeye survival), 988 (sockeye)

B53: 4 (salmon)

S200 (dragonflies); S208 (stoneflies); S295 (sockeye production)

CUMACEA (CRUSTACEANS)

C6: 23

CUNNER

C2: 423; C4: 431; C8: 275

J11: 254

B5: 5

S234

CURING (see Pickling; Salt fish; Smoking)

CURRENT, REACTIONS TO

J4: 491 (speckled trout); J7: 434 (Atlantic salmon and eels); J8: 241 (chum, pink, coho); J10: 523 (coho and chum salmon fry); J11: 69 (young Pacific salmon), 550 (cutthroat trout)

B34: 11 (oyster); B57: 56, B99 (Atlantic salmon)

S298 (Atlantic salmon)

CURRENTS, WATER (see also Flow; Oceanography)

C1: 101, 353 (Bay of Fundy); C2: 69 (Halifax Harbour); C3: 271 (West Vancouver I.), 282 (West Graham I., B.C.)

J1: 133 (in models), 171 (St. John estuary, N.B.); J2: 89 (sea mussel distribution), 116 (Gulf of Maine), 141 (Bay of Fundy); J3: 43 (Nootka Sound), 93 (West Vancouver I.), 203 (Fundy region); J4: 339 (Gulf Stream), 491 (Margaree Harbour, N.S.); J5: 169 (St. John estuary), 398 (Juan de Fuca Strait); J6: 460 (West Greenland); J7: 1 (Scotian Shelf), 545 (oyster trays); J9: 42 (Loudoun Channel), 213 (Grand Manan Channel), 329 (Great Lakes); J10: 97 (Fundy region), 155 (Scotian Shelf), 177 (Labrador coast); 564 (NE. Japan); J11: 14, 503, 799 (Strait of Juan de Fuca), 503 (Strait of Georgia), 23 (effect of wind), 26 (prediction); 32 (Bay of Fundy), 48 (Hecate Strait), 198 (Strait of Belle Isle), 229 (Esquiman Channel), 431 (relation to appendicularians), 853 (Seymour Narrows, B.C.)

B13: 3 (east coast ice); B18: 3 (Strait of Belle Isle); B34: 13 (B.C. oyster beds)

B57: 56 (Margaree Estuary, N.S.); B83: 18 (Alberni Inlet, B.C.); B88: 46 (Arctic); B91: 3 (off Queen Charlotte I.)

S20 (tides in estuaries); S21 (tides in oceans); S56, S75 (Fraser R. mouth); S112, 376 (Strait of Georgia); S123 (B.C. fjords); S136, S139, S178, S201, S204, S210 (transgressions on Scotian Shelf); S174 (dynamic studies in Pacific); S211, S346, (Passamaquoddy Bay); S304, S361 (Arctic); S316 (Hudson Bay); S317 (Labrador Current); S345 (fresh water entering sea); S358 (Sambro lightship)

CUSHMAN, JOSEPH AUGUSTINE

C1921: 133

CUSK
C. 531 (plastic from muscle)
 NS8: 29

CUSK-POUT
 B68: 197

Cyclopterus ventricosus (see Lump-sucker, smooth)

Cyclopterus lumpus (see Lumpfish)

Cyclothona microdon
 B68: 105

Cymatogaster aggregatus
 B68: 147

Cynoscion nobilis
 B68: 145

CYPRINIDAE (see Minnows)

Cyprinus carpio (see Carp)

D

DAB, MOTTLED SAND (Pacific sand dab)
 J8: 375
 B68: 308

DAB, RUSTY (see Flounder, yellowtail)

DAB, SPECKLED SAND
 C8: 99
 B68: 309

DACE, HORNED
 S213

DACE, LONGNOSE
 B56: 37
 S144

DACE, REDBELLY
 S144

Dactylopterus volitans
 S235

Damalichthys vacca
 B68: 151

DAMS
 J2: 95
 S356

Dasyatis dipterurus
 B68: 68

Dasycottus setiger
 B68: 275

DAUPHINEE, JAMES ARNOLD
 S23; S25

DAVIDSON, FREDERICK ALEXANDER
 S257

DAVIDSON, VIOLA MAY
 C2: 295; C6: 495; C8: 357
 J7: 432
 S32; S121

DEAS, CATHERINE PEARSON
 J7: 221, 513, 552, 563

DECAPODA (see also Crabs, Lobsters, Shrimps)
 AF10m (Atlantic)
 NR3: 11

Decapterus macarellus
 S235

Decapterus polyaspis
 B68: 161

DECOLORIZATION (OIL)
 C7: 413
 J7: 471

DEHYDRATION (see also Drying)
 C8: 475 (during refrigeration)

DELACY, ALLAN CLARK
 B66; B74

Delolepis giganteus
 B68: 184

Delphinapterus leucas (see Beluga)

DELURY, DANIEL BERTRAND
 J8: 281

DENATURATION OF PROTEINS
 C8: 311 (by freezing)
 J5: 411 (effect of pH and NaCl); J7: 599
 (by freezing); J8: 325; J9: 392 (by salting)
 S324 (by freezing)

DENSITY (see Oceanography; Specific gravity)

DENSTEDT, ORVILLE FREDERICK
C6: 365; C8: 321
J1: 487; J2: 13
B37
S97

DEODORIZATION
J8: 189 (of seal oil)

DEPARTURE BAY, B.C.

C1906-10: 85 (parasitic copepods), 215 (new cottoid), 295 (geology); C1911-14(1): 51 (iodine content of flora and fauna); C1918-20: 29 (effect of weather), 35 (oceanography); C1: 81 (phytoplankton), 203 (annelids); 455 (starfish); C2: 285 (annelids); C3: 13 (isopods), 317 (ophiurans); 405 (annelids); C4: 19 (*Bankia*), 305 (annelids); C5: 213 (barnacle); C6: 65 (annelids)
J2: 335 (endoparasitic trematodes); J10: 85 (polychaete)
B17: 3 (birds and herring)
S61 (algae)

DEPLETION

C1901: 59 (herring); C2: 137 (trout); C5: 3 (sockeye)
J6: 483 (sockeye); J10: 1 (herring)
S266 (fisheries)

DEPTH DISTRIBUTION

C1917-18: 229 (marine invertebrates);
C1918-20: 49 (plankton diatoms); C6
241 (haddock), 485 (copepod plankton)
J10: 498 (bottom fauna); J11: 69 (Pacific
salmon); 479 (plankton)
B56: 49 (whitefish)
S6: 2 (*Sagitta*); S44: 60 (wood-borers);
S48 (growth rate of algae)
NR 16: 60 (lobster larvae)

DEPTH, RIVER WATER (*see* Flow)

Derepodichthys alepidotus
B68: 197

DESMIDS (*see* Algae, freshwater)

DETWEILER, JOHN D.
C1911-14(1): 43; C1914-15: 145; C1917-18:
75

Diaphus rafinesquei
B68: 114

DIATOMS (*see also* Algae, freshwater; Plankton)
C1902-05: 55; C1906-10: 243; C1911-14(1):
11; C1915-16: 11; C1918-20: 63, 115;
C1921: 155; C1: 81, 135; C2: 31; C6:
495; C8: 357
J1: 357; J3: 12; J7: 490
S32; S56; S75; S121; S277

DICKIE, LLOYD MERLIN
J11: 660

DIGBY COUNTY, N.S.
C1901: 59 (sardines); C1914-15: 41 (lobster-
hatching ponds)
J11: 660 (scallops); 963 (flounders)
S15 (mussels)

DIGESTION (*see* Physiology)

DIMETHYLAMINE
J5: 32

DIMORPHISM (SEXUAL)
J3: 417; J6: 228

Diphyllobothrium (*see* Cestoda)

DISCOLORATION (*see also* Browning)
C7: 139, 425 (halibut)
J3: 70, J5: 276, 287, 438, J6: 10, 17, J9: 157,
377 (in salt fish)
B8 (lobster); B9: 16 (dried fish); B12
(halibut)
S102 (fresh, frozen and smoked fish)
NS4 ("pink" in salt cod)

DISCHARGE RATE (*see* Flow)

DISEASE (OF FISH) (*see also* Bacteria, in
diseases)
C1914-15: 81 (herring); C1917-18: 149, 169
(salmon), 172 (furunculosis); C8: 103
(furunculosis)
J5: 1 (furunculosis)
S218, S252 (furunculosis); S243 (whirling
disease); S283 (P.E.I. oysters); S311
(use of poisons)

DISEASE (OF INVERTEBRATES) (*see also* Bac-
teria, in diseases)
C1914-15: 73 (quahaugs)
J3: 358 (lobsters)
B22: 12 (oysters)
NR16: 38 (lobsters)

DISEASE (OF MAN)

B60: 78 (from oysters); B75 (poison from shellfish)

DISINFECTANTS (*see also* Ice, germicidal; Poisons)

C7: 139 (formaldehyde)

J6: 17 (for red bacteria), 63, 84 (sodium nitrite), 257 (general); J7: 101 (general)

DISINFECTION (*see also* Sterilizing; Sanitation)

DISPERSAL (*see* Migration)

DISTRIBUTION OF FISH (Arctic)

B73: 2; B94: 1

S361

DISTRIBUTION OF FISH (Atlantic)

C1901: 9, 25, 55, 59; C1902-05: 26, 81, 91;

C1906-10: 54, 69, 79; C1911-14(1): 25, 69;

C1918-20: 99, 109; C1921: 49; C1: 416;

C2: 102, 115, 161; C3: 449, 470, 489; C5:

423; C7: 203; C8: 13, 275, 295, 433.

J3: 258, 329; J4: 229, 310; J7: 95; J8: 314;

J9: 83; J11: 11, 198, 894

B1: 7; B2: 9; B3: 6; B4: 4; B23: 16;

B25: 6; B43: 5; B51: 2; B61; B69;

B70: 6; B71: 8

S5; S40; S41; S54; S62; S111; S130;

S155; S159; S184; S203; S205; S211;

S226; S234; S235; S258; S281; S298;

S354

NR4

NS6; NS8; NS14

DISTRIBUTION OF FISH (INTERIOR WATERS)

C1901: 9 (N.B.); C1902-05: 22 (L. Ontario), 29 (Ottawa R.); C1911-14(2): 1 (Georgian Bay); C1: 133 (Quill Lakes, Sask.), 419 (Athabasca lakes, Alta.); C2: 146 (Ontario), 412 (Cultus Lake); C3: 365 (Forbes Brook, P.E.I.), 377 (Jasper Park); C4: 197 (Jasper Park); C6: 178 (Bay of Quinte, Ont.), 455 (Hudson Bay), 473 (Churchill, Man.); C7: 325 (Man.), 378 (Hudson Bay region); C8: 1, 13 (Hudson and James Bay), 103 (B.C.)

J2: 299; J3: 328; J4: 310 (Margaree R., N.S.); J5: 294 (Cultus L., B.C.); J7: 26 (Tedford L., N.S.), 95 (N.S.), 183 (Great Bear L., N.W.T.), 248 (Beaver R., N.S.); J8: 207 (Great Slave L., N.W.T.), 347 (Ont. and Que.), 383 (Charlotte Co., N.B.); J9: 10 (Hudson Bay), 83 (Ungava Bay region), 204 (Cultus L., B.C.), 417

(Cowichan L., B.C.); J10: 196 (Okanagan region, B.C.); J11: 362 (Duffin Cr., Ont.), 624 (Port John L., B.C.), 673 (B.C.), 884 (hosts of *Triaenophorus*)

B23: 29; B32: 5 (B.C.); B56: 28 (Okanagan lakes, B.C.); B72 (N.W.T.); B78 (Great Bear L., Great Slave L., N.W.T.); B79: 2 (Nelson R., Man.); B82: 2 (Great Bear L., N.W.T.)

S137, S138, S198, S213 (L. Jesse, N.S.); S144, S227 (B.C.); S163 (Jones L., B.C.); S170 (Vancouver, B.C.); S197 (Shuswap L., B.C.); S200 (Cultus L., B.C.); S205 (L. Ainslie, N.S.); S206 (N.S.); S224 (Swan L., B.C.); S229 (N.B. lakes); S242 (Potter's L., N.B.); S249, S250 (trout); S270 (Ont. salmon); S278 (P.E.I. ponds); S282 (Tathlina and Kakisa Lakes, N.W.T.) S357 (L. Winnipeg region)

NS6 (Newfoundland rivers)

DISTRIBUTION OF FISH (PACIFIC)

C1: 285; C3: 265, 489; C7: 319, 469; C8: 162

J2: 335; J3: 12; J7: 157, 238, 513, 609; J8: 374; J9: 141, 143; J10: 461, 560; J11: 335

B23: 25; B31: 3; B34: 7; B38: 11; B40: 6; B47: 31; B54: 3; B62: 3; B63: 19; B64: 4; B66: 5; B67: 19; B68

S114; S130; S143; S148; S160; S227; S258; S290; S302; S322; S334; S336

DOAN, KENNETH HENRY

B79; B98

DOE, LANCELOT ATHELSTANE EARLSTON

J9: 42

DOG

C7: 57; C8: 228

DOGFISH, ATLANTIC SPINY (BIOLOGY)

J11: 351

AF12e: 17

NR15

DOGFISH, ATLANTIC SPINY (TECHNOLOGY)

C1918-20: 125; C1: 401; C7: 477; C8: 275

S17; S18

NR15

NS5

DOGFISH, PACIFIC SPINY (BIOLOGY)

B27: 9; B68: 59

S13; S58; S59; S66; S81; S82; S119; S392

Enchelyopus cimbrius (see Rockling, four-bearded) *Eumicrotremus orbis*
B68: 293

ENEMIES (see Predators) *Eumicrotremus spinosus*
B73: 7

Engraulis mordax (see Anchovy) **EUPHAUSIACEA (CRUSTACEANS)**

Enophrys bison C8: 181
B68: 258 B15: 7

ENTOMOSTRACA (see also Barnacles; Cladocera; Copepoda; Ostracoda)

C1911-14(2): 221; C3: 179, 331 *Eupomotis gibbosus* (see Pumpkinseed)

J11: 479 **EXPLOITATION, RATE OF**

Entosphenus japonicus J5: 43; J11: 580, 827

B94: 5 **EXTRACTS**

Entosphenus tridentatus (see Lamprey, Pacific) C7: 439 (from skate's skin)

ENVIRONMENT (see Light; Limnology; Oceanography; Salinity; Temperature; etc.)

ENZYMES

J1: 145 (digestive); J3: 473, J10: 590 (for leather bate); J4: 367, JS: 187, J6: 368, J7: 561, J8: 195 (trimethylamine oxide reducing); JS: 217, J7: 513 (tryptic); J7: 94 (thiaminase), 552 (tryptic and peptic); J9: 393 (lipoxidase); J11: 529 (thiaminase) S23, S25, S82 (arginase)

Eopsetta jordani (see Brill)

EPHEMERIDA (see Mayflies)

Epigieichthys atro-purpureus **F**

B68: 176 **FAGERLUND, ULF HENRIK MATTHIAS**

L. ERIE

C1921: 73, 87 (ciscoes) S371; S380

Erilepis zonifer **FARMER, ERNEST HAROLD**

B68: 241 S349

Esox lucius (see Pike, northern) **FARMING, OYSTER (see Culture)**

Esox masquinongy (see Muskellunge) **FAT CONTENT OF FISH**

Etrumeus teres J4: 461

S226 **FATS (see Oils)**

Eucalia inconstans **FATTY ACIDS (see Oil, fatty acids of)**

S144 **FAUNA, ATLANTIC**

EULACHON

B37: 146 (oil); B64: 3; B68: 99; B89: 346 C1901: 19, 29, 49; C1902-05: 10, 31; C1906-10: 37, 45, 69; C1914-15: 145; C1917-18: 93, 99, 229, 329; C1918-20: 80, 137; C2: 81, 89, 95, 295; C3: 323, 331; C4: 397, 527

B37: 146 (oil); B64: 3; B68: 99; B89: 346 J2: 95, 409; J3: 189; J4: 281; J5: 23, 459; J6: 472; J7: 95, 128; J8: 134, 314; J9: 223; J10: 366

B44; B48; B60; B75

AF3a (Hydroida); AF9b (Polychaeta); AF10m (Decapoda); AF10n (Pantopoda); AF12d (Marsipobranchii); AF12e (Elasmobranchii); AF12f (Holocephali)

S1; S2; S4; S5; S6; S15; S44; S45; S164; S184; S272; S277; S283; S353

FAUNA, ARCTIC

B94

S361 **FAUNA, INTERIOR WATERS**

Eumetopias jubata (see Sea-lion, Steller's) C1: 132 (Sask.); C2: 135 (Ont.), 507 (B.C.); C3: 365 (P.E.I.); C4: 77 (Ont.)

157, 175, 185, 197, 221, 343 (Alta.);
C5: 381, 441 (Man.); C6: 201 (Ont.),
455 (Hudson Bay)
J2: 499 (N.B. and N.S.); J3: 21, 452
(B.C.); J6: 133 (B.C.), 476 (N.B. and
N.S.); J7: 22, 95 (N.S.), 183 (N.W.T.);
J8: 347 (Ont., Que.); J9: 204, 417 (B.C.)
B42, B56 (B.C.); B78 (N.W.T.)
S163, S197, S200, S208, S228 (B.C.); S198
(N.S.); S242, S297 (N.B.); S278, S279
(P.E.I.)

FAUNA, PACIFIC

C1911-14(1): 5; C1918-20: 29; C1: 95,
143, 203, 219, 441, 455; C2: 285, 469,
531; C3: 47, 317, 501; C4, 9; C6:
23; C7: 213; C8: 77, 181
J1: 481, 503; J3: 12; J9: 164
B30; B34; B62; B65; B80; B91; B93: 11
PF1a (Lobosa); PF1b (Reticulosa); PF1c
(Heliozoa); PF1d (Radiolaria); PF1e
(Mastigophora); PF1f (Ciliata); PF1g
(Suctoria); PF9b(1) (Polychaeta Er-
rantia); PF9b(2) (Polychaeta Seden-
taria); PF10e (Cirripedia)
S9; S11; S12; S19; S28; S30; S49; S64; S65;
S69; S72; S73; S74; S76; S88; S126; S132;
S133; S147; S153; S169; S181; S238;
S245; S262; S286; S307; S320

FECUNDITY (see Reproduction)

FEE, ARCHIBALD R.
C3: 13

FEEDSTUFFS

J8: 111, 117
B92 (for mink)
S373; S374

FERMENTATION (DIGESTIVE)
S377 (in ruminants)

FERTILIZATION (OF WATERS)
J1: 67; J5: 138; J7: 248
S297; S341; S385

FERTILIZER (FROM FISH)
C1901: 60; C1918-20: 125
NS10; NS11: 18

FILEFISH, ORANGE
S226

FILLETS
C8: 301 (frozen)
J3: 1 (smoking); J5: 148 (spoilage); J7:
370, 378, 421, 430, 461, 528, 536, 580

(spoilage); 449 (palatability); J8: 111
(spoilage)
B20 (frozen); B100 (handling)

FILLETING (see Processing)

FILMS, PAINT

C8: 321
J1: 487; J2: 13
B37: 12; B59: 320; B89: 289

FINN, DONOVAN BARTLEY

C6: 355, 417; C8: 311

FISH, CHARLES JOHN
J3: 189

FISH CULTURE (see Hatcheries, Management,
Transplantation)

FISH MEAL

J7: 563 (amino acids); J10: 64 (vitamin
B₁₂)
B25: 27 (haddock); B35: 7, B36: 19 (pil-
chard); B47: 26 (herring); B59: 425
(changes in oil)
S299 (utilization); S310 (vitamin B₁₂);
S373, S374 (herring)
NS10; NS11

FISHER, HAROLD DEAN

B93
S386

FISHER, KENNETH CLARKE
J10: 187

FISHERY BY-PRODUCTS (see By-products)

FISHING EFFORT (INTENSITY)

J1: 277 (lobster); J3: 145 (herring); J8:
264 (related to gill nets)

FISHING METHODS

C1901: 59 (herring weirs); C1902-05: 21
(dynamite); C1906-10: 9 (boats); C6: 463
(otter trawl); C7: 295 (gill nets)
J8: 264 (gill nets); J11: 284 (L. Winnipeg)
B1: 9 (American plaice); B2: 28 (lumpfish);
B3: 8 (angler); B4: 10 (muttonfish);
B14: 5, B57: 18, B58: 24 (salmon); B20:
10, B25: 22, B69: 8 (haddock); B30: 6,
B62: 25, B91: 7 (crab); B36: 8 (pilchard);
B47: 6, B63, B67: 6 (herring); B54: 10
(lingcod); B56: 40 (whitefish); B60: 56
(oysters); B61: 3 (Atlantic cod); B70: 8
(smelt); B71: 6 (halibut)

S276 (angling vs. netting); S313, S314 (nets vs. electrofishing); S319 (nylon and cotton nets); S392 (Pacific dogfish)
NR7: 22 (lobster); NR17: 126 (capelin)

FJARLIE, ROBIN LENT IBSEN
S355

FLAGELLATA
C6: 13
J7: 490
B75: 1

FLATFISH (see Flounder, Halibut, Sole)

FLEMING, ALLISTER MELVILLE
J11: 11

FLESH, FISH (see also Muscle)
C1921: 125 (lobster); C6: 1 (proteins), 375 (freezing haddock); C7: 147 (spoilage of haddock)
J4: 63 (spoilage of Atlantic cod); J7: 74 (vitamin B), 585, 594, 599 (protein fractions)
S31 (tensile strength); S101 (heat capacity); S102, S360 (discoloration); S109 (freezing rate); S209 (spoilage); S309 (quality when frozen); S310 (vitamin B₁₂); S337 (preservation with antibiotics)

FLORA (see also Algae)
C1901: 41 (St. Andrew's, N.B.); C1902-05: 1 (plankton-Atlantic), 59 (Canso, N.S.), 71 (algae-Canso); C1906-10: 265 (St. Croix-Passamaquoddy, N.B.); C1911-14(1): 5 (marine-Nanaimo, B.C.); C1911-14(2): 201, 219 (Georgian Bay); C1914-15: 169, C2: 503 (kelp—Pacific); C1: 132 (Quill Lakes, Sask.); C2: 519 (desmids—B.C.)
J3: 366 (Cultus L.); J8: 1 (Great Slave L.), 383 (N.B.)
S163 (Jones L., B.C.); S170 (brackish water); S242 (Potter's L., N.B.); S278, 279 (P.E.I. National Park)

FLOUNDER, CURL-FIN (see Sole, curl-fin)

FLOUNDER, FOUR-SPOT (*Paralichthys oblongus*)
NS14: 21

FLOUNDER, GEORGES BANK (*Pseudopleuronectes dignabilis*)
NS14: 19

FLOUNDER, LEMON (see Sole, lemon)

FLOUNDER, LONGFIN (see Sole, rex)

FLOUNDER, LONG-JAW (*Atheresthes stomias*)
J8: 375
B68: 310

FLOUNDER, ROCK (see Sole, rock)

FLOUNDER, ROUNDNOSE (see Brill)

FLOUNDER, SAND (*Lophopsetta maculata*)
S234
NS14: 22

FLOUNDER, SLENDER (see Sole, slender)

FLOUNDER, SLIPPERY (see Sole, Dover)

FLOUNDER, SMOOTH (*Liopsetta putnami*)
J11: 954
S234
NS14: 19

FLOUNDER, STARRY (*Platichthys stellatus*)
B68: 324
S33; S81; S82; S202

FLOUNDER, WINTER (*Pseudopleuronectes americanus*)
C4: 137; C7: 67
J11: 954, 963
S52 (lactic acid); S54; S59 (blood sugar); S108 (parasites); S234
NS 14: 17

FLOUNDER, WITCH (*Glyptocephalus cynoglossus*)
J11: 954
NR4: 14
NS 14: 12

FLOUNDER, YELLOWTAIL (*Limanda ferruginea*)
J11: 171, 954
S234
NS14: 15

FLOUNDERS (see also Sole)
C7: 67; C8: 99, 291
J5: 148; J7: 552; J8: 374, 479

FLOW (RATE OR VOLUME OF)
J2: 383, J6: 217 (McClinton Creek, B.C.); J4: 48, J5: 228 (Margaree R., N.S.), 323 (Forest Glen Brook, N.S.); J5: 401 (Fraser R., B.C.), 485 (Moser R., N.S.); J6: 158 (Cowichan R., B.C.), 311, 399 (salmon rivers of N.B. and N.S.); J8: 178 (Skeena R.), 241 (reaction of young Pacific salmon); J9: 63 (Somass R., B.C.); J10: 146 (St. Lawrence R.), 523 (response of salmon fry); J11: 362 (salmon survival), 814, 881 (effect on tides—Fraser R.)

B57: 56 (Margaree R., N.S.); B86 (Morice-town Falls, B.C.); B99 (artificial freshets, LaHave R., N.S.)

S83 (Fraser R.); S175 (relation to Atlantic salmon abundance); S257 (pink salmon streams); S298 (Atlantic salmon rivers); S391 (related to Pacific salmon production)

FOERSTER, RUSSEL EARL

C1: 219; C2: 335; C5: 1, 37, 55; C8: 345
J2: 311; J3: 26, 421; J4: 151, 184; J5: 315;
J6: 267, 483; J7: 88; J10: 293; J11: 339,
988

B50; B53

S67; S84; S124; S127; S197; S248; S294;
S295; S390

FOOD STUDIES (see also Predators; Birds)

C1901: 26 (*Mya*), 49 (sea urchin); C1915-16:
40 (coho); C1917-18: 12 (sea-lion);
C1918-20: 80 (muttonfish); C1921: 87
(ciscoes); C1: 8 (lumpfish), 287 (Pacific
fishes); C2: 182, 228 (shad), 402 (sockeye),
456 (cunner); C3: 269 (spring salmon);
C4: 197 (Jasper Park fishes), 421 (*Littorina*);
C5: 443 (whitefish), 464 (pumpkin-
seed); C6: 200, 445 (whitefish), 239 (cisco);
C7: 179 (L. Winnipeg fish), 245 (pilchard)

J1: 477 (B.C. herring); J2: 299 (birds), 401
(herring), 485 (lobster), 499 (Atlantic
salmon); J3: 12 (copepods and Pacific
fish), 20 (sucker, Kamloops trout), 323
(birds), 450 (sockeye); J4: 48 (king-
fishers), 309 (mergansers), 382 (herring);
J5: 84 (starfish), 131 (*Prosopium*), 183
(brook trout), 293 (sockeye predators),
365 (herring), 448 (trout); J6: 90 (salmon
and trout), 137 (trout), 419 (*Themisto*),
421 (seal); J7: 22 (killifish, white perch),
183 (lake trout), 490 (shellfish); J8: 103
(squawfish), 207 (lake trout, whitefish,
etc.), 347 (muskellunge); J9: 1 (Arctic
char), 169 (brook trout), 204 (*Cultus L.*
fishes); J10: 326 (Arctic char), 512 (Great
Slave L. fishes); 560 (fur seals—N.E.
Japan); J11: 5 (lake trout), 535 (haddock)

B1: 18 (American plaice); B2: 10 (lumpfish);
B3: 15 (angler); B4: 10 (muttonfish);
B25: 20 (haddock); B30: 15 (crabs);
B42: 3 (trout); B55: 32 (mergansers);
B54: 21 (cod); B56: 42 (whitefish); B60:
11 (oysters); B65 (spring and coho sal-
mon); B78: 15 (whitefish, suckers); B79:
7 (speckled trout); B82: 8 (coregonine
fish); B98: 13 (beluga)

S50 (Entomostraca); S73 (Pacific clams);
S98 (herring and sockeye); S112 (in
Strait of Georgia); S124, S295 (sockeye);
S140 (salmon and trout—Margaree R.);
S141 (pond culture); S148 (fish predators
of Pacific salmon); S166 (selection by
ciliates); S185 (*Daphnia pulex*); S272
(haddock); S346 (Passamaquoddy Bay
sardines)

NR6: 29 (haddock); NR9 (trout); NR14:
84 (Atlantic cod); NR15: 48 (Atlantic
spiny dogfish); NR 17: 128 (capelin)

FORAMINIFERA

C1921: 133

FORBES BROOK, P.E.I.

C3: 365 (trout); C5: 203 (trout)

FORBES, JOHN CAMPBELL

C3: 467
S31

FORMIC ACID

S380 (in marine worm)

FOUGÈRE, HENRI

J6: 441. J7: 200. J9: 388

FORRESTER, CLIFTON ROGER

S394

FOSKETT, DUDLEY ROBERT

S328; S342; S362

FOTHERGILL, NOEL OVIATTE

S358

FOWLER, JAMES

C1901: 41. C1902-05: 59

FRANK, MARK

J5: 249, 276, 287

FRASER, CHARLES McLEAN

C1914-15: 119, 133. C1915-16: 21, 39.
C1917-18: 5, 105, 329. C1918-20: 7, 29,
35, 137. C1921: 103, 167. C1: 95, 285.
C3: 323, C6: 475

J1: 503; J7: 214

AF3a

S19; S72; S73; S147

FRASER R. AND ESTUARY, B.C.

J5: 401 (oceanography). J11: 814, 881
(effect of flow on tides), 988 (sockeye)

B16 (sockeye tagging)

S56, S75, S83, S344 (oceanography)

FREEZING (FISHERY PRODUCTS) (*see also* Frozen fish; Refrigeration)
C1: 297 (failure and success). C6: 375 (haddock). C8: 311 (halibut)
J1: 95 (bacteria)
B20 (haddock); B24 (mackerel); B29: 13, B49: 7 (halibut); B44: 3 (oysters); B59: 420 (changes in oil); B90: 9 (salmon)
S109 (rate of freezing); S309 (effect on quality); S324 (effect on proteins)

FREEZING POINT
S101

FRENCH, HAROLD VICTOR
J6: 338; J7: 585

FRESHETS (*see* Flow)

FRIEDMAN, MAC HEGBY FRED
J1: 239, 251, 261

FRITZ, CLARA W.
C1918-20: 49, 63

FROGS
B94: 24

FROST, NANCY
NR3; NR4; NR5; NR9
NS6; NS8; NS14

FROST-FISH
B68: 160

FROZEN FISH (*see also* Freezing; Refrigeration)
C1906-10: 23; C1911-14(1): 73; C1: 299, 401; C6: 375; C8: 311
J7: 237, 599
S102

FRY, FREDERICK ERNEST JOSEPH
J7: 169

Fundulus diaphanus (*see* Killifish, banded)

Fundulus heteroclitus (*see* Mummichog)

FUNDY (*see* Bay of Fundy)

FUNGI (*see also* Moulds)
C1911-14(1): 47; C1911-14(2): 213; C1917-18: 152, 171; C5: 193

FUR-BEARING ANIMALS (*see also* Seals)
J7: 94
B92 (mink)
S361 (Arctic)

Furcimanus diapterus
B68: 191

FURUNCULOSIS (*see* Disease)

G

Gadus aeglefinus (*see* Haddock)

Gadus callarias, G. morrhua (*see* Cod, Atlantic)

Gadus macrocephalus (*see* Cod, Pacific)

Gadus ogac (*see* Cod, Greenland)

GAGE, DOUGLAS GORDON
J11: 355

Galeorhinus galeus (*see* Shark, soup-fin)

GALL-BLADDER, FISH
S70

GAME FISH (*see also* Distribution; Salmon; Trout; etc.)
B32 (B.C.); B72: 89 (N.W.T.); B84: (Cowichan R., B.C.)
S141 (pond culture); S144 (B.C.)

GASPEREAU (*see* Alewife)

GASTERosteidae (*see* Sticklebacks)

Gasterosteus aculeatus (*see* Stickleback, three-spined)

GASTROPODA (SNAILS, etc.) (*see also* Nudibranchiata)
C3: 133, 167; C4: 413
J5: 23; J7: 219
S13 (pentose)

GEAR, FISHING (*see also* Fishing methods; Sanitation)
C7: 295 (preservation)

GEE, ALBERT HALDANE
C3: 347; C5: 431

GELOSE (*see* Carrageen)

Genyonemus lineatus
B68: 146

GEOLOGY (*see* Physiography)

GEORGIA STRAIT, B.C. (*see* Strait of Georgia)

GEORGIAN BAY, ONT.
 C1911-14(2): 1 (fishes), 53 (Odonata), 95 (Mollusca), 113 (Ephemeraida), 145 (Malacostraca), 165 (leeches), 177 (bass parasite) 195 (Bryozoa), 210 (plants), 213 (fungi), 219 (aquatic plants), 221 (Entomostraca)

GIBBARD, JAMES
 B75

GIBBONS, NORMAN EDWIN
 C8: 275, 291, 301
 J3: 70, 77, 439; J6: 17
 S96

Gibbonsia elegans montereyensis
 B68: 172

Gibbonsia metzi
 B68: 173

GILBERT, CHARLES HENRY
 C1906-10: 215

Gilbertidia sigalutes
 B68: 279

GILL RAKERS
 J6: 392

GILTAY, LOUIS
 J5: 459
 AF10n
 S126

GLAZE (IN FISH)
 S156

GLUE (FROM FISH)
 C1918-20: 129; C7: 165
 B25: 27

GLYCEROL
 J6: 326

GLYCOGEN (see Carbohydrates)

Glyptocephalus cynoglossus (see Flounder, witch)

Glyptocephalus zachirus (see Sole, rex)

GOBY, ARROW
 B68: 169

GOBY, FINE-SCALED
 B68: 169

GOBY, LARGE-SCALED
 B68: 167

GODFREY, HAROLD
 B101

GOLDEYE
 B72: 80

GOLDFISH
 C1917-18: 167
 J7: 169; J8: 67; J11: 57

Goniaulax (see Flagellata; Poisons)

GOOSEFISH (see Angler)

GORDON, HOWARD SCOTT
 J10: 442

GOWANLOCH, JAMES NELSON
 C3: 133, 167

GRAHAM, MICHAEL
 J2: 95

GRAINGER, EDWARD HENRY
 J9: 65; J10: 326; J11: 98, 507

GRAN, HAAKON HASBERG
 J1: 279

GRAY, ROBERT
 B52

GRAYFISH (see Dogfish)

GRAYLING, AMERICAN (*Thymallus signifer*)
 B32: 44; B72: 40, 61, 90; B94: 16
 S144

GREAT BEAR LAKE, N.W.T.
 J7: 176 (trout), 190 (pike); J10: 51 (coregonine fishes)
 B72: 31 (survey); B78: (*Pontoporeia* and *Mysis*); B82 (coregonine fishes)

GREAT LAKES (see also Lakes Erie, Huron, Ontario and Superior)
 J9: 325 (temperature distribution), 329 (surface temperatures)

GREAT SLAVE LAKE, N.W.T.
 J7: 190 (pike); J8: 1 (limnology), 207 (fishes), 264 (fishing effort); J10: 413 (whitefish), 486 (bottom fauna); J11: 827 (lake trout)
 B72: 45 (survey); B78 (*Pontoporeia* and *Mysis*)

GREEN BODIES (OF POLYCHAETE WORMS)

S106

GREEN GILLS (IN MOLLUSCS)

S277; S279

GREENLING, FRINGED

B68: 234

S81 (creatine)

GREENLING, KELP

B68: 231

GREENLING, LONG-SPINED

B68: 236

GREENLING, PAINTED

B68: 235

GREENLING, WHITE-SPOTTED

B68: 233

GREENWOOD, HAMAR

C1917-18: 5

GRENADE, FILAMENTED

B68: 135

GRENADE, ROUGH-SCALED

B68: 136

GRENADE, SMOOTH-SCALED

B68: 134

GREYFISH (*see* Dogfish)

GREYSOLE (*see* Flounder, witch)

GRIBBLE (Isopoda)

C2: 307; C4: 1, 9

B80

S19

GROSS, LOUIS

C1918-20: 99

GROWTH RATE

C1914-15: 87 (hake), 95 (haddock), 103 (cod); C1915-16: 21 (spring salmon), 42 (coho salmon); C1917-18: 111 (pollock); C1918-20: 7 (Pacific salmon), 73 (muttonfish); C1921: 22 (mussels), 81 (ciscoes), 119 (anglers); C1: 12 (lumpfish); C2: 151 (sockeye), 213, 234 (shad), 451 (cunner); C3: 389 (rainbow trout), 431 (haddock); C4: 81 (*Mya*), 121 (mussel), 197

(Jasper Park fishes), 275 (haddock), 287 (cod), 413 (*Littorina*); C5: 18, 42 (sockeye), 193 (*Saprolegnia*), 459 (pumpkinseed); C6: 79 (pandalids), 199, 427 (whitefish), 293 (haddock); C8: 413 (haddock)

J1: 191 (crab); J2: 41, 353, 485 (lobster), 89 (mussels), 311 (sockeye), 359 (Kamloops trout), 379 (salmon); J3: 132, 145 (herring); J4: 202 (sockeye), 287 (oyster); J5: 8 (*Teredo*), 71 (lobster), 84 (starfish), 337 (*Prosopium*); J6: 10, 74, 233, 257, 349, 491 (bacteria), 63 (mammals), 334 (cisco and whitefish); J7: 35, 74 (rats), 178 (lake trout), 190 (pike), 221, 430, 552 (bacteria), 545 (quahaugs and oysters); J8: 117 (trout), 207 (Great Slave L. fishes), 347 (maskinonge), 374 (flounders, soles), 383 (brook trout), 469 (ciscoes); J9: 1 (Arctic char), 169 (brook trout); J10: 69 (bacteria), 211 (theory), 253 (phytoplankton), 326 (Arctic char), 371 (lobster), 413 (whitefish); J11: 171 (yellowtail flounder), 284 (whitefish), 362 (salmon parr), 660 (scallops), 827 (lake trout)

B1: 20 (plaice); B2: 18 (lumpfish); B3: 13 (angler); B4: 7 (muttonfish); B15: 6 (coho); B25: 16 (haddock); B27 (spring salmon); B56: 44 (whitefish); B62: 19 (Pacific crab); B82: 4 (coregonine fish) S15 (mussel); S48 (algae); S72, S73, S94, S262 (clams); S85 (B.C. trout); S121 (phytoplankton), S142 (crab); S164 (lobster); S264 (Pacific pilchard); S270 (Ontario salmon); S341 (trout—Crecy L., N.B.); S364 (Pacific herring and halibut) NR1: 45 (Atlantic salmon); NR6: 14 (haddock); NR9 (various trout); NR14: 76 (Atlantic cod); NR15: 13 (Atlantic spiny dogfish); NR17: 87 (Atlantic capelin); NR18: 26 (lobster) NS2: 4, NS15: 20 (lobster)

GRUNT-FISH

B68: 280

GULF OF MAINE

J1: 279 (phytoplankton); J3: 189 (zooplankton)

GULF OF ST. LAWRENCE (*see* St. Lawrence, Gulf of)

GULF STREAM

J4: 339; J10: 155

GULLS (*see* Birds)

GUNNEL
S234

GURNARD, FLYING
S235

GUTTING, SPLITTING AND CLEANING FISH

B1: 11 (plaice); B3: 9 (angler); B9: 5 (fish for drying); B19: 7 (mackerel for pickling); B20: 10 (haddock for ice fillets); B24: 8 (mackerel for canning); B49: 5 (halibut); B52: 2 (herring)
NS9: 9 (cod)

GUTTMANN, ABRAHAM
J9: 129

Gwyn, AGNES MARGARET
J5: 11

Gymnacanthus sp.
B73: 3

Gymnacanthus tricuspidis
J11: 248

H

HACHEY, HARRY BENEDICT

C6: 463; C7: 91
J1: 121, 133, 171, 227; J4: 339, 378, 424;
J5: 377; J7: 1, 355; J9: 325; J10: 148;
J11: 32, 198, 395
S136; S139; S178; S182; S201; S204;
S210; S304; S306; S316; S317; S358;
S395

HADDOCK (BIOLOGY)

C1901: 61; C1914-15: 95; C1915-16: 86;
C3: 423; C4: 265; C6: 241; C8: 409
J11: 250, 535
B25; B69
S38; S41; S52; S272
NR6

HADDOCK (TECHNOLOGY)

C1917-18: 175, 179; C3: 347, 441, 457, 469;
C4: 27, 117, 227, 257, 317; C5: 431; C6:
1, 375; C7: 57; C8: 123, 131, 227, 275,
291, 302, 531
J1: 179; J3: 473; J5: 221; J6: 53; J8: 111
B7: 21; B20: 2; B25: 27; B59: 405, B89:
339 (oil)
S31; S38; S52; S101; S324; S349 (oil)

HAGFISH
B68: 49
AF12d

HAKE (*Urophycis tenuis*) (BIOLOGY)

C1914-15: 87
J11: 251
B68: 129
S35; S52; S234
NS8: 25

HAKE (TECHNOLOGY)

C8: 275
J5: 221
B7: 19; B59: 406, B89: 338 (oil)
S35; S52

HAKE, SILVER (*Merluccius bilinearis*)

NS8: 27

HAKE, SPOTTED (*Urophycis regius*)

NS8: 27

HAKE, SQUIRREL (*Urophycis chuss*)

C1914-15: 87
S54
NS8: 25

HALIBUT, ARROWTOOTHED (*see* Flounder, long-jaw)

HALIBUT, ATLANTIC (BIOLOGY)

C1914-15: 19; C1: 409
B71
S52
NS14: 7

HALIBUT, ATLANTIC (TECHNOLOGY)

C8: 275
B7: 19
S52; S324

HALIBUT, PACIFIC (BIOLOGY)

C1914-15: 1, 19
B68: 311
S41

HALIBUT, PACIFIC (TECHNOLOGY)

C7: 141, 425; C8: 313
J4: 174, 396, (oil), 327, 367; J5: 148, 267,
411; J6: 103, 113 (oil), 119; J7: 35, 51,
74; J10: 69
B7: 7; B12; B29; B37; 149, B59: 399,
B89: 328 (oil); B49
S89; S156; S364

HALIBUT, GREENLAND (*Reinhardtius hippoglossoides*)

NS14: 11

HALIFAX, N.S.

C2: 69 (polluted water); C8: 409 (young haddock)
B61 (cod)

HALOPHILES (*see* Bacteria of salted fish; Moulds)

HAMPTON, WILLIAM FORSEY
NS4; NS5; NS9; NS12; NS13

HANDLING (FISH, ETC.)

B2: 26 (lumpfish); B19: 11 (pickled mackerel); B20: 24 (haddock); B33: 7, B43: 11 (lobsters); B44: 3, B60: 63 (oysters); B49: 7 (halibut); B52 (herring)
S31 (tensile strength of haddock muscle); S41, S102 (bacteria); S161 (live lobsters); S323 (refrigeration); S332 (modern methods)
NS9: 7 (salt codfish); NS15: 41 (lobsters)

HANDSAW-FISH

B68: 119

HARDING, KENNETH FAIRHURST
J4: 59
S152

HARPER, ESTHER LOUISE
S347

HARPER, FRANCIS
C1: 419

HARRINGTON, ROBERT WHITING, JR.
J11: 529

HARRISON, FRANCIS CHARLES
C1917-18: 149, 179; C1: 279
B12
S41; S89

HART, JOHN LAWSON
C6: 165, 427, 445; C7: 245
J3: 417; J4: 478; J6: 164
B36; B38; B39; B64
S120; S128; S160; S161; S171; S176;
S183; S193; S194; S196; S220; S221;
S239; S240; S246; S247; S253; S254;
S261; S264; S302; S315; S389

HART, JOHN SANFORD
J7: 169

HART, JOSEPHINE FRANCES LAVINIA
C6: 23
S133; S169

HARVEY, J. M.

C5: 83

HASLER, ARTHUR DAVIS
J11: 107, 472

HATCHERIES, FISH (*see also* Transplantation)

C1917-18: 105 (sockeye), 149 (Atlantic salmon); C5: 3, 40, 57 (sockeye); C6: 207 (whitefish)
J2: 311 (sockeye); J4: 141, 233 (pink salmon), 151 (sockeye); J6: 311 (Atlantic salmon), 483 (sockeye); J7: 88 (sockeye); J8: 125 (salmonoids), 383 (speckled trout); J10: 196 (speckled trout)
B50, B53 (sockeye); B84: 27 (Atlantic salmon, Kamloops trout, speckled char and lake trout)
S84, S127 (sockeye); S141 (salmonoid game fish); S259 (Atlantic salmon)

HATCHERIES, FOR INVERTEBRATES (*see* Culture)

HATCHET-FISH, SILVERY
B68: 106
J11: 501

HAYES, ERNEST REGINALD
S331

HAYES, FREDERICK RONALD
C3: 133; C4: 413
B99
S116

HEART RATE (*see* Physiology, circulatory system)

HEAT, LATENT AND SPECIFIC
S101 (fish muscle)

HEIGHT, OF WATER IN RIVERS (*see* Flow)

HELIOSOVA (PROTOZOA)
PF1c

Hemilepidotus hemilepidotus
B68: 244

Hemilepidotus spinosus
B68: 243

HEMING, L., MAN.
J11: 1 (trout-perch)
B95: 27 (pike control)

HENDERSON, JEAN T.
C2: 307; C3: 235; C4: 397; C6: 215

HEREDITY (ANADROMOUS AND FRESHWATER FORMS)
J4: 1; J6: 245; J7: 88; J9: 169

HERLINVRAUX, RICHARD HENRY
J11: 14, 799

HERMAN, F.
S395

HERRING, ATLANTIC (BIOLOGY)
C1901: 59; C1902-05: 95; C1906-10: 23;
C1914-15: 81; C1915-16: 21
J1: 145; J2: 95, 401; J4: 349, 392; J5: 365;
J10: 1; J11: 607
S211; S234

HERRING, ATLANTIC (TECHNOLOGY) (see also Sardines)
C1: 279
J1: 179; J7: 116; J11: 255
B52
S101

HERRING, LAKE (see Ciscoes)

HERRING, PACIFIC (BIOLOGY)
C1921: 105
J1: 477; J3: 108, 145; J4: 461; J5: 11, 347,
474; J7: 403; J9: 42, 393; J11: 587
B17: 1; B47: 1; B63: 1; B65: 20 (salmon food);
B67: 1; B68: 79
S41; S146; S171; S190; S193; S221, S240,
S247, S254; S266, S285, S327, S343;
S363; S364; S378

HERRING, PACIFIC (TECHNOLOGY)
J4: 478; J5: 428, J6: 109 (oil), 305; J7: 35,
138, 513, 522; J10: 64
B37: 140 (oil); B47: 26; B59: 387, B89:
312 (oil)
S13; S81; S82; S325; S335; S373; S374

HERRING, ROUND (*Etrumeus teres*)
S226

HESS, ERNEST
C4: 27; C5: 93; C7: 147; C8: 459, 489
J1: 95, 109; J3: 358; J5: 249, 276, 287,
438; J6: 1, 10, 17
B24

HEWSON, LEO CLARE
S319

Hexagrammos stelleri
B68: 233

Hexagrammos superciliatus (see Greenling, fringed)

Hexanchus corinus, *H. griseus* (see Shark, Pacific mud)

HILDEBRAND, HENRY HERMAN
J9: 83

Hippoglossoides classodon (see Sole, flat-head)
B68: 315

Hippoglossoides platessoides (see Plaice, American)

Hippoglossus hippoglossus (see Halibut, Atlantic)

Hippoglossus stenolepis (see Halibut, Pacific)

HIRUDINEA (see Leeches)

Histiocottus bilobus
B68: 246

HISTOLOGY

C1918-20: 185; C8: 207
J1: 109; J11: 63 (chum salmon testes)
S18; S24

HISTORY

B21 (Atlantic salmon fishery); B34 (oysters in B.C.); B36 (pilchards in B.C.); B47 (herring in B.C.); B64 (smelts of B.C.); B90 (chum and pink salmon fishery); B91 (crabs of Graham Is.); S132 (oysters in B.C.); S258 (fishery research in Canada); S292 (eastern Canadian fisheries); S315 (fishery problems in B.C.); S329 (Ungava Bay); S344 (Canadian Pacific oceanography); S346 (Passamaquoddy Bay sardine fishery); S354 (Atlantic fisheries); S389 (B.C. trawl fishery); S392 (B.C. dogfish fishery); S393 (B.C. whaling); S394 (blackcod fishery)

Histrio pictus
S203

HOAR, WILLIAM STEWART
J4: 409, 441; J6: 90; J8: 241; J10: 523;
J11: 57, 63, 69
B90
S184: S223

Holconotus rhodoterus
B68: 154

HOLLETT, ANDREW
J6: 152, 183; J7: 116

HOLOCEPHALI (CHIMAEROIDS) (*see also* Ratfish)
AF12f

HOMANS, ROSS EDANS SPENCER
J11: 535
S203; S272

Homarus americanus (*see* Lobster)

HOMING (*see* Migration)

HOOGLAND, PIETER LEVINUS
J11: 355

HORMONES
C7: 1, 17, 31 (in skate)

J11: 57 (growth factor from salmon pituitary), 63 (androgens from salmon)

HOURSTON, ALAN STEWART
J8: 347
S327; S343

HOURSTON, WILLIAM RODERICK
B101

HUBBS, CARL LEAVITT
C7: 319
J6: 30

HUDSON BAY
C1921: 133 (Foraminifera), 149 (sticklebacks); C1: 21 (echinoderms), 27 (Ascidacea), 419 (fishes); C3: 1 (amphipods); C6: 455 (fisheries), 463 (survey), 475 (hydroids), 483 (copepods), 495 (diatoms); C7: 91 (oceanography), 361 (Bryozoa), 377 (Cestoda); C8: 1 (coregonine fish), 13 (other fish), 63 (marine algae)
J3: 350 (echinoderms); J5: 23 (Pteropoda); J6: 129 (Polychaeta); J9: 1 (Arctic char)
B98 (beluga)
S15 (mussels); S62 (fishes)

HUMES, ARTHUR GROVER
J11: 816

HUMIDITY (*see also* Drying)
J6: 10, 303; J7: 200

HUNTER, ANDREW
S23; S25; S81; S82

HUNTER, JOHN GERALD
S383

HUNTING METHODS
B98: 14 (beluga)

HUNTSMAN, ARCHIBALD GOWANLOCH
C1906-10: 103; C1911-14(1): 39; C1911-14(2): 145; C1917-18: 169; C1918-20: 85, 93; C1921: 49, 167; C1: 27, 125; C2: 69, 81, 89, 95; C3: 423; C6: 455
J2: 401; J4: 1, 96, 409; J5: 227, 485; J6: 311, 399, 476; J7: 248, 363; J10: 1; J11: 198
B1; B5; B9; B13; B20; B21; B51; B57
S5; S6; S20; S21; S32; S40; S140; S165;
S168; S175; S187; S188; S192; S205;
S207; S211; S225; S256; S258; S259;
S266; S267; S269; S270; S275; S276;
S280; S289; S291; S292; S298; S300;
S303; S306; S333; S346; S354

HUNTSMAN, MARY ELINOR
C7: 31

L. HURON, ONT.
J9: 325 (temperature distribution)

HUTCHINSON, ANDREW HENDERSON
J6: 206
S56; S75; S112

HUTCHINSON, SAMUEL JEROME
S257

HYDROGENATION (*see also* Oil, chemical reactions)

C7: 521 (pilchard oil)
B37: 31; B59: 110; B89: 247

HYDROGEN-ION, pH (IN BACTERIAL GROWTH, etc.)

J4: 219, 355; J5: 121, 203, 265, 276, 287, 411; J6: 45, 53, 233, 403, 435; J7: 155, 561; J10: 590 (caecal enzyme)
S63; S70; S71; S78; S119

HYDROGEN-ION, pH (IN NATURAL WATERS)
(*see* Limnology; Oceanography)

HYDROGRAPHY (*see* Limnology; Oceanography; Physiography)

HYDROIDS (*see also* Hydrozoa)
AF3a

Hydrolagus colliei (*see* Ratfish)

HYDROLYSIS OF OIL (*see also* Oil, chemical reactions)
C7: 505

HYDROXYLAMINE (AS PRESERVATIVE)

J6: 349. J10: 69

HYDROZOA

C1917-18: 329; C1918-20: 137; C1: 95, 219, 291; C3: 323; C6: 475

J1: 503

AF3a

S79; S147

Hyperprosopon argenteum

B68: 153

Hypomesus pretiosus (see Smelt, silver)

Hypsagonus quadricornis

B68: 282

I

ICE, GERMICIDAL

J4: 327; J5: 36, 244; J7: 155
S370; S375

Icelinus borealis

B68: 253

Icelinus filamentosus

B68: 255

Icelinus tenuis

B68: 254

Icelus bicornis

J11: 248

Icichthys lockingtoni

B68: 203

Icosteus aenigmaticus

B68: 332

IDYLL, CLARENCE PURVIS

J5: 448; J6: 133

IDLER, DAVID RICHARD

S371; S380

INCONNU (*Stenodus*)

B72: 59; B94: 9

INSECTS, AQUATIC (see also Chironomidae; Mayflies; Stoneflies)

C1911-14(2): 53 (dragonflies, Go Home Bay, Ont.); C4: 185 (Jasper Park), 221 (beetles, Jasper Park)

J9: 204 (Cultus L.)

S69 (Pacific marine species); S200 (dragonflies, Cultus L.)

INSULIN, FROM FISH (see also Islands of Langerhans)

C2: 115

B7: 1; B54: 24

S17; S24

INTRODUCTION (OF EXOTICS) (see Transplantation)

IODINE (see also Oil, chemical reactions)

C1911-14(1): 51, C1914-15: 25, 169 (seaweeds); C1: 73 (sea water); C4: 115 (fish thyroid)

IODINE VALUES

S152

ION EXCHANGE

J7: 552

IRISH LORD, BROWN

B68: 243

IRISH LORD, RED

B68: 244

IRISH MOSS

S273, S274 (stabilizing power)

ISLANDS OF LANGERHANS (see also Morphology)

S18 (elasmobranch and teleostean fishes)
S24 (freshwater and marine fishes); S25, S34 (effect of removal on blood sugar)

ISOMERIZATION

S350 (new procedure)

ISOPODA (CRUSTACEANS) (see also Gribble)

C3: 13

S1; S5; S39

Isopsetta isolepis

B68: 322

Isurus nasus (see Shark, mackerel)

J

JACKSON, F. SLATER

C1: 297

S18

JACKSON, KENNETH JOHN

S343

JAMPOLSKY, ABEY

J11: 57

JAPAN
J10: 560 (marine fishes)

JASPER PARK, ALTA.
C3: 377 (fishes); **C4:** 157 (stoneflies), 175 (leeches), 185 (aquatic insects), 197 (food and growth of fishes), 221 (beetles), 343 (plankton)

JEFFERS, ANNE MEREDITH
J2: 401

JEFFERS, GEORGE WILLIAM
C7: 203
J2: 401
B18

JELLYFISH
C1902-05: 121
S139; S5

L. JESSE, N.S.
S137, S206, S213 (fish population); **S138** (copper sulphate); **S198** (survey); **S229** (poison)

JEWETT, STANLEY GORDON, JR.
J11: 543

JOHANSEN, FRITS
C2: 423; **C3:** 1

JOHNSON, MARTIN WIGGO
J3: 189

JOHNSON, WALTER HENRY
J2: 401; **J4:** 349, 392; **J5:** 365

JOHNSTON, MARION LAWSON
J4: 363

JOHNSTON, WILLIAM WALLACE
C8: 531
J3: 473; **J4:** 363; **J5:** 217

JOHNSTONE STRAIT, B.C. (see also Vancouver Island)
B31, B74, B96 (tagging salmon)

JONES L., B.C.
S163 (survey)

Jordania zonope
B68: 260

JUAN DE FUCA STRAIT
J5: 398 (currents); **J11:** 14 (tidal effects), 503, 799 (currents)

K

KAMLOOPS REGION, B.C.
B42 (productivity of lakes)

Katsuwonus pelamis
B68: 164

KEEN, DOROTHY JEAN
J10: 97

KELEHER, JAMES JOHN
J8: 469
S357

KELLEY, ALICE M.
J6: 435

KELP
C1914-15: 25, 169; **C2:** 503

KELP-FISH, SPOTTED
B68: 172

KELP-FISH, STRIPED
B68: 173

KENDALL, WILLIAM CONVERSE
C1: 419

KENNEDY, WILLIAM ALEXANDER
J7: 176, 190; **J8:** 264; **J10:** 51, 413; **J11:** 284, 827
B76; B81; B82
S282

KERR L., N.B.
J8: 340 (whitefish)

KERSWILL, CHARLES JAMES
J5: 23; **J7:** 545
S279

KETCHEN, KEITH STUART
J10: 459
S394

KETCHUM, BOSTWICK HAWLEY
J10: 97

KHAN, MUHAMMED MUJIBAR RAHMAN
J9: 393

KIDNEY
S310 (vitamin B₁₂); **S335** (vitamin B_{12a})

KIELHORN, WILLIAM VINEYARD
J9: 223

KILLIFISH, BANDED
J7: 22
S213

KINDEL, EDWARD MARTIN
C1917-18: 93, 229

KING, EARL JUDSON
C7: 119
S121

KING, HAZEL M.
C7: 127

KINGFISH
B68: 146

KINGFISHERS (*see* Birds)

KING-OF-THE-SALMON
B68: 139

KLEEREKOPER, HERMAN
J10: 283; J11: 130

KLUGH, ALFRED BROOKER
C1906-10: 265; C1911-14(2): 219; C1915-16: 79; C1918-20: 181; C6: 41
S9; S27; S29; S37; S43; S48; S50; S79; S103; S104; S105; S110

KNIGHT, ARCHIBALD PATTERSON
C1901: 9; C1902-05: 21, 37, 111; C1906-10: 23; C1914-15: 41; C1917-18: 53; C1918-20: 185
J3: 184
B6

KOCH, LYLE WARD
C4: 77

KOKANEE (LAND-LOCKED SOCKEYE)
C1917-18: 105
J4: 192; J7: 88
B32: 42; B55: 33; B56: 29
S144; S237

KOMAROV, SIMON ANDREW
C7: 11, 57, 439; C8: 123, 131

KOOTENAY, L., B.C.
J2: 359 (Kamloops trout)

KUCHEL, CLEMENS CARL
J4: 174; J5: 203

KUITUNEN-EKBAUM, ELLA (*see also* Ekbaum E.)
C8: 71, 89, 99, 161
J7: 505

KYUQUOT, B.C.
B26 (salmon tagging)

L

LABRADOR
J10: 177 (oceanography)
NR12 (salmon obstructions); NR13 (Atlantic salmon)

LABRIE, ARTHUR
J3: 439

LACHANCE, ROBERT ANDRÉ
J9: 157

LA CROIX, GEORGE WILFRID
J11: 853

LACTIC ACID
J4: 355; J5: 122
S38; S52; S207

LADYSMITH HARBOUR, B.C.
J4: 53 (littleneck clam)

Lagenorhynchus obliquidus
B89: 352 (oil)

LAKES (*see* name of lake)

LAKE WHITEFISH
C5: 441; C6: 165, 427, 445; C7: 342; C8: 3
J6: 334; J8: 207, 340; J10: 51, 413; J11: 284
B56: 39; B72: 39, 55, 76; B76: B82; B94: 12
S144; S235
NR9: 7

LAKELOSE L., B.C.
J8: 82 (limnology), 103 (sockeye); J11: 479
(plankton)

LAMELLIBRANCHIATA (*see* Bivalves)

Lamna cornubica, L. ditropis (*see* Shark, mackerel)

Lampanyctus leucopsarus
B68: 115

Lampanyctus regalis
B68: 116

LAMPREY, ARCTIC

B94: 5

LAMPREY, PACIFIC

J8: 275

B68: 47

S36, S144

LAMPREY, SEA

AF12d

S155; S234

Lampris regius

B68: 138

LANCE (see Sand-launce)

LANGFORD, RAYMOND ROBERT

J10: 238

LANGSTROTH, GEORGE OTTY

C6: 375

S101; S109

LANIGAN, JOHN ARTHUR

S327

LANTERN-FISH, BIG-EYED

B68: 110

LANTERN-FISH, BIG-FINNED

B68: 113

LANTERN-FISH, BLUE

B68: 111

LANTERN-FISH, SMALL-EYED

B68: 116

LANTERN-FISH, SMALL-FINNED

B68: 115

LANTERN-FISH, WHITE-SPOTTED

B68: 114

LARKIN, PETER ANTHONY

B78

LAUNCE (see Sand-launce)

LAUZIER, LOUIS

J8: 332; J10: 146, 155

LAWLER, GEORGE HERBERT

J11: 1, 884

LEATHER MANUFACTURE (see also Oil, industrial uses)

J3: 473; J10: 590

Lebias superciliatus

B68: 234

LEECHES

C1911-14(2): 165

C4: 175

LEIM, ALEXANDER HENRY

C2: 161; C3: 457

B75

S4; S139

LENGTH-WEIGHT RELATIONSHIPS

C1915-16: 44 (coho); C1918-20: 7 (Pacific salmon), 79 (muttonfish); C2: 245 (shad), 462 (cunner); C5: 73 (sockeye); C6: 427 (whitelish)

J2: 318 (sockeye), 401 (Atlantic herring); J4: 441 (Atlantic salmon), 461 (herring), 478 (B.C. herring); J7: 197 (pike); J8: 207 (Great Slave Lake fishes), 347 (muskel-lunge); J9: 1 (Arctic char), 169 (brook trout); J10: 310 (coho), 416 (whitefish); J11: 827 (lake trout)

B1: 11 (plaice); B2: 21 (lumpfish); B25: 19 (haddock); B81 (L. Manitoba fish); B82: 5 (coregonine fish); B93: 6 (seals) S54 (squirrel hake, pollack, winter flounder, smelt); S250 (rainbow trout)

LEOPARDFISH (*Anarhichas minor*)

S203; S226

Lepeophtheirus (see Salmon-louse)

Lepidogobius lepidus

B68: 169

Lepidopsetta bilineata (see Sole, rock)

Lepomis gibbosus (see Pumpkinseed)

Leptagonus decagonus

S203

Leptoclinus maculatus

J11: 248

Leptocottus armatus (see Cabezon)

LESSER SLAVE L., ALTA.

J7: 190 (pike)

B95: 31 (*Triaenophorus*)

LETHAL LIMITS

C1911-14(1): 73 (freezing mummichog); C2: 81 (light), 89 (larval lobster—temperature), 95 (temperature); C3: 149 (*Littorina*—temperature and salinity), 167 (*Buccinum*—dehydration and temperature); C4: 397 (lamellibranchs—temperature), 495, 501 (skate—temperature); C5: 109 (*Enchelyopus*—temperature and salinity); C8: 137 (skate tissue—temperature)

J2: 485 (larval lobster—temperature, salinity, food); J4: 409 (Atlantic salmon—salinity); J5: 84 (starfish—temperature and salinity), 485 (Atlantic salmon and brook trout—temperature); J6: 63 (mammals—sodium nitrite), 435 (herring eggs—oxygen), 476 (stream fishes—temperature); J8: 164 (Pacific salmon—salinity), 479 (flounders—tags); J9: 265 (Pacific salmon—temperature); J10: 196 (B.C. fishes—temperature)

B5: 8 (lobster—light); B33: 16 (lobster—temperature)

NR17: 127 (Atlantic capelin—temperature)

Leucichthys (see Ciscoes)

LIFE HISTORY

C1902-05: 95 (Clupeidae); C1911-14(2): 131 (mayflies); C1914-15: 87 (hake); C1915-16: 39 (coho); C2: 161 (shad), 423 (cunner); C3: 133 (*Littorina*), 247 (Bryozoa); C4: 265 (haddock), 474 (spring salmon); C5: 3, 37, 55 (sockeye); C6: 165 (whitefish); C7: 342 (*Triaenophorus*); C8: 345 (sockeye)

J1: 1 (copepods), 159 (Atlantic salmon); J2: 41 (lobster), 209 (*Chironomus*), 311 (sockeye); J5: 176, 471 (brook trout); J6: 24 (*Lepeophtheirus*), 37 (Atlantic salmon), 245 (rainbow trout); J7: 176 (lake trout); J10: 85 (*Micronereis*), 539 (*Porrocaecum decipiens*); J11: 1 (trout-perch), 326 (Polychaeta)

B1: 13 (plaice); B2: 11 (lumpfish); B3: 9 (angler); B4: 4 (muttonfish); B17: 5, B47: 2 (herring); B21: 5 (Atlantic salmon); B22: 15, B60: 6 (oyster); B25: 13 (haddock); B30: 9, B62: 5 (crab); B32: 14 (trout); B45: 7 (fish tapeworm); B53: 3 (sockeye); B54 (lingcod); B55: 2 (merganser); B56: 29 (fishes of Okanagan L.); B64: 3 (smelts); B68 (Pacific marine fishes); B78: 17 (*Pontoporeia*), 27 (*Mysis*); B79: 3 (speckled trout); B84: 6 (spring

salmon), 8 (coho), 14 (steelhead and rainbow trout); B85 (Pinnipedia); B93: 23 (seals); B97 (kingfisher); B98: 10 (beluga)

S45 (*Teredo navalis*); S50 (Entomostraca); S77, S90, S91, S92, S107, S113, S115, S118, S122, S134, S145, S179, S195, S219, S233, S328, S342, S362 (sockeye); S133 (B.C. crabs); S164 (lobster); S188 (Atlantic salmon); S194 (pilchard); S202 (parasites); S287 (B.C. salmon)

NR1: 33 (Atlantic salmon); NR2, NR17 (Atlantic capelin); NR7 (lobster); NR13 (Atlantic salmon); NR15 (Atlantic spiny dogfish)

NS8 (Newfoundland fishes); NS15 (lobster)

LIGHT (see Light, reactions to; Limnology; Oceanography)

LIGHT, REACTIONS TO

C1914-15: 115 (eels); C2: 81 (marine animals); C3: 154 (*Littorina*); C5: 83 (*Calanus*)

J1: 319 (phytoplankton); J2: 485 (lobster); J4: 323 (Atlantic salmon), 349, 392 (herring); J5: 365 (copepods), 485 (Atlantic salmon); J6: 10 (bacteria), 90 (salmon and trout), 158 (coho and spring salmon), 217 (pink salmon), 425 (*Themisto*); J7: 363 (*Odontosyllis*), 432 (salmon, eels); J8: 134 (amphipods), 241 (Pacific salmon); J10: 253 (phytoplankton), 548 (spring salmon and trout); J11: 69 (Pacific salmon), 529 (effect on athiaminosis)

B5: 8 (lobster larvae); B62: 14 (crab); B99 (Atlantic salmon)

S8 (narcotized animals); S29 (wave length—reproduction rate); S40 (marine animals); S44 (wood-borers); S50 (Entomostraca); S79, S104, S111 (marine organisms); S164 (lobster laying eggs); S215 (rainbow trout and full moon); S281 (common sucker)

Limanda aspera

B68: 323

Limanda ferruginea (see Flounder, yellowtail)

LIMNOLOGY (GENERAL)

C2: 345 (*Cultus* L., B.C.); C5: 381 (Manitoba lakes)

J5: 138 (ponds at St. Andrews, N.B.); J7: 22 (Telford L., N.S.); J8: 383 (Charlotte County lakes, N.B.)

B42: 3 (Paul L., B.C.), 22 (Pinantan L., B.C.), 25 (Penask L., B.C.), 27 (Fish L.,

B.C.), 28 (Nicola L., B.C.); B78 (Great Bear and Great Slave Lakes, N.W.T.); B82 (Great Bear L., N.W.T.); B94: (Arctic)

S37 (productivity of lakes); S50 (entomotracon ecology); S67 (Fraser R.); S163 (Jones L., B.C.); S170 (Lost Lagoon, Vancouver, B.C.); S195 (Shuswap L., B.C.); S198 (L. Jesse, N.S.); S200 (Cultus L., B.C.); S206 (N.S. lakes); S224 (Swan L., B.C.); S278 (ponds in P.E.I. park); S297 (Crecy L., N.B.)

NR9: 17 (trout streams of Newfoundland)

LIMNOLOGY (PHYSICAL AND CHEMICAL)

C1: 127 (Quill lakes, Sask.); C6: 185 (Bay of Quinte, Ont.)

J1: 67 (fertilized ponds); J2: 227 (Prince Albert lakes, Sask.); J3: 363 (Cultus L., B.C.); J6: 217 (McClinton Creek, B.C.); J8: 1 (Great Slave L., N.W.T.); 82 (Lakelse L., B.C.); J9: 325, 329 (Great Lakes); 417 (Cowichan L., B.C.); J11: 624 (Port John L., B.C.)

B42: 5 (Paul L., B.C.); 23 (Kamloops region lakes, B.C.); B56: 8 (Okanagan lakes, B.C.); B57: 42 (Margaree R., N.S.); B72: 35 (lakes of N.W.T.); B83: 59 (Alberni Inlet); B84: 5 (Cowichan R., B.C.)

S43 (light penetration, Chameko L., N.B.); S50 (effect of temperature, etc., on Entomotracon); S125 (oxygen saturation); S138 (L. Jesse, N.S.); S197 (Shuswap L., B.C.); S217 (temperature of fresh waters); S237 (kokanee and sockeye salmon waters); S239 (Potter's L., N.B.); S257 (pink salmon streams, B.C.); S270 (Ont. salmon streams); S278 (ponds in P.E.I. park); S297 (Crecy L., N.B.)

Limnoria lignorum (see Gribble)

LINDSAY, SHEILA TAYLOR
NR1

LING (*Lota*, see Burbot)

LING (*Urophycis*, see Hake)

LING, EUROPEAN
J11: 11 (in Newfoundland waters)

LINGCOD (*Ophiodon elongatus*) (BIOLOGY)
B54; B68: 237

LINGCOD (TECHNOLOGY)

C7: 405

J2: 461; J4: 472; J6: 305; J7: 35, 51, 74, 552; J10: 69

B37: 148, B59: 401, B89: 336 (oil); B54: 23

S22 (pentose); S59 (blood sugar); S68 (liver asphyxial hyperglycaemia); S81 (creatine); S82 (arginase); S375 (preservation)

LINTON, EVERETT PERCIVAL

J3: 1; J6: 338, 380

S135

Liopsetta pulnami (see Flounder, smooth)

LIPARID, ABYSSAL

B68: 302

LIPARID, BLACK-TAILED

J11: 502

B68: 304

LIPARID, CONTINUOUS-FINNED

B68: 300

LIPARID, DENNY'S

B68: 299

LIPARID, GREEN'S

B68: 301

LIPARID, GÜNTHER'S

B68: 297

LIPARID, JUAN DE FUCA

B68: 298

LIPARID, PALLAS'S

B68: 296

LIPARID, PRICKLY

B68: 305

LIPARID, RING-TAILED

B68: 295

LIPARID, SHORE

B68: 297

LIPARID, SMALL-DISKED

B68: 303

LIPARID, TADPOLE

B68: 306

Liparis callyodon
B68: 296

Liparis cyclopus
B68: 297

Liparis dennyi
B68: 299

Liparis fabricii
B73: 7

Liparis florae
B68: 297

Liparis fucensis
B68: 298

Liparis pulchellus
B68: 300

Liparis major
J11: 249

Liparis rutteri
B68: 295

LIPOXIDASE
J9: 393

LIVER
J7: 563 (amino acids); J9: 129 (vitamin B₁₂);
J11: 355 (nutritive value and vitamin
B₁₂)
S68 (lingcod); S310 (vitamin B₁₂)

LIVER OIL
C7: 405 (lingcod); C8: 265 (salmon)
J4: 174 (halibut, dogfish), 312 (dogfish), 396
(halibut), 405 (Pacific cod), 472 (rockfish,
blackcod, lingcod); J5: 428 (Pacific
fishes); J6: 113 (halibut, dogfish), 326
(dogfish); J11: 357 (vitamin A, cod)
B37: 51 (Pacific fishes); B59: 210, B89:
180 (production)
S55, S86 (dogfish); S349 (cod, sardine, etc.)
NR15 (Atlantic spiny dogfish)
NS3 (cod)

LOBOSA (PROTOZOA)
PF1a

LOBSTER (BIOLOGY)
C1902-05: 28; C1906-10: 277; C1914-15:
41, 119; C1915-16: 11; C1917-18: 53;
C1918-20: 185; C2: 83, 89; C3: 310;
C8: 421

J1: 213, 269; J2: 41, 223, 349, 485; J3:
339, 343, 358; J5: 71; J6: 152, 228, 281,
291; J8: 486; J10: 371; J11: 253
B5; B43
S164
AF10m
NR7; NR8; NR10; NR11; NR16; NR18
NS2; NS15

LOBSTER (TECHNOLOGY)
C1921: 125; C2: 1; C4: 227; C5: 93;
C8: 227
J1: 179; J3: 102; J6: 183; J7: 70; J10: 521
B6; B8; B10; B33
NR10; NR11
NS2

LOCKHART, ERNEST EARLE
J10: 590

LOGAN, JOHN FREMONT
C6: 1

LOGIE, ROBERT REED
S283

Lophius americanus, *L. piscatorius* (see Anglers)

Lophopsetta maculata (see Flounder, sand)
S234

LOST LAGOON, VANCOUVER, B.C.
S170, S228 (brackish water)

Lota lota, *L. maculosa* (see Burbot)

LOWE, CHARLES WILLIAM
C1918-20: 124
J3: 12

LUCAS, COLIN CAMERON
S56; S83; S112

LUCAS, VERA ZORA (see also Smith, V.Z.)
C6: 397

Lumpenella longirostris
B68: 188

Lumpenus anguillaris
B68: 186

Lumpenus fabricii
J11: 249

Lumpenus lampetraeformis
B73: 8

LUMPFISH
C1: 1
B2
S226

LUMPSUCKER, SMOOTH
J9: 141

LUMPSUCKER, SPINY (ATLANTIC)
B73: 7

LUMPSUCKER, SPINY (PACIFIC)
B68: 293

LUSENA, CHARLES VICTOR
J10: 521

Lycodapus fierasfer (see *Lelpout*, pecky)

Lycodapus mandibularis
B68: 196

Lycodes brevipes
B68: 191

Lycodes pectoralis
B68: 190

Lycodopsis pacificus
B68: 193

Lyconectes aleutensis
B68: 184

LYMPHOID ORGAN (see Morphology)

Lyopsetta exilis (see *Sole*, slender)

Mac, Mc, M'

MACALLUM, ARCHIBALD BYRON
C1902-05: 121; C1918-20: 134
J3: 182

MACARTHUR, M. ISOBEL
J5: 1

MACBRIDE, E. W.
C1906-10: 217

MACCALLUM, WALLACE ALLISON
J8: 111

MACCLEMENT, W. T.
C1911-14(2): 210; C1915-16: 11
J4: 228

McCLINTON CREEK, B.C.
J3: 403, J4: 141, 233, J6: 217, J7: 224 (pink salmon)
S148 (food of predators); S257 (pink salmon)

McCOMBIE, ALEN MILNE
J10: 253

McCONNELL, JOHN ANDERSON
J8: 103

McCORMICK, N. A.
C2: 115
B7
S24; S26

McCrimmon, Hugh Ross
J11: 362

McDONALD, D. L.
C1906-10: 83

MACFARLANE, CONSTANCE
C8: 63

McFARLANE, SAMUEL HANFORD
J2: 335

M'GONIGLE, ROWLAND HILLARY
C6: 315
S44; S45; S117; S159; S217; S243

MACGREGOR, DONALD GORDON
J9: 213; J11: 32
S306

McHUGH, JOHN LAURENCE
J5: 131, 337, 347, 474
B56; B64
S247

MACINTOSH, FRANK CAMPBELL
J1: 497

MACKAY, ALEXANDER HOWARD
C1901: 55; C1902-05: 55; C1918-20: 115

MACKAY, BRUCE SINCLAIR
J11: 48

MACKAY, DONALD COPELAND GIBSON
C7: 335
J1: 191
B62
S142

MACKAY, MARGARET E. (MACKAY-SAWYER, M. E.)
 C7: 17, 439, 477
 J1: 239
 S70; S71

MACKENZIE, BEATTIE ALEXANDER
 S386

McKENZIE, RUSSELL ALDERSON
 C8: 433
 J5: 105
 B23; B61; B69; B70: B71
 S203; S226; S235; S336

MACKENZIE R., N.W.T.
 B72: 21 (survey)

MACKINNON, DIXON
 J10: 523, 548; J11: 310

MCLELLAN, HUGH JOHN
 J7: 335; J9: 213; J10: 155; J11: 404, 419

MCLEOD, DONALD CAMERON
 J10: 125

MACLEOD, DONALD JOHN
 C2: 1

MACLEOD, JOHN JAMES RICHARD
 C3: 437, 457
 S17; S26

MACLEOD, ROBERT ANGUS
 S377; S379; S388

McMAHON, VERNON HERBERT
 J11: 479

McMURRICH, JAMES PLAYFAIR
 C1906-10: 33; C1915-16: 1
 J4: 308

McMYNN, ROBERT GORDON
 B91

McNAIRN, N. A.
 J2: 401

M

MACPHERSON, NORMAN LETHAM
 NS1; NS3

MACKEREL, ATLANTIC (BIOLOGY)
 C1901: 61; C1902-05: 2; C4: 443
 J11: 249
 S41; S234

MACKEREL, ATLANTIC (TECHNOLOGY)
 C8: 227, 291
 J3: 102; J4: 363; J5: 217; J7: 62
 B19; B24; B89: 345 (oil)
 S101

MACKEREL, PACIFIC
 B68: 163

Macropinna microstoma
 B68: 104

Macrourus bairdi
 S226

Macrozoarces americanus (*see* Eelpout)

Macrurus acrolepis
 B68: 136

MADTOM, TADPOLE
 J11: 529

MAGNESIUM AMMONIUM PHOSPHATE
 J6: 183

MAILLARD REACTION (BROWNING)
 J8: 74
 S351; S360

Makaira albida
 S226

Malacocottus kincaidi
 B68: 276

MALACOSTRACA (CRUSTACEANS) (*see also* Amphipoda; Cumacea; Decapoda; Euphausiacea; Isopoda; Mysidacea)
 C1911-14(2): 145 (Georgian Bay, Ont.)

Mallotus catervarius, *M. villosus* (*see* Capelin)

MALPEQUE BAY, P.E.I.
 J2: 41 (lobsters); J5: 8 (shipworms), 84
 (starfish), 236 (oceanography)
 B22, B48 (oysters); B77 (bivalves)
 S234 (fishes)

MAMMALS, MARINE (*see also* Seals, Sea lions, Whales)
 J11: 267 (parasites)

MAN
 J5: 211 (trimethylamine in)

MANAGEMENT OF FISHERIES — RECOMMENDATIONS AND PROCEDURES (see also Poisons)
C6: 208 (whitefish)
J4: 141 (pink salmon); J5: 335 (sockeye), 485 (Atlantic salmon); J6: 37 (Atlantic salmon), 250 (rainbow trout), 449 (oysters) 483 (sockeye); J8: 125 (salmonoids), 369 (butter clams), 383 (brook trout); J10: 442 (economic approach)
B5: 9, B43: 4 (lobsters); B21: 56, B57, B99 (Atlantic salmon); B22: 28, B34: 7, B60: 14 (oysters); B32: 46 (trout); B36: 23 (pilchard); B47: 34, B67: 7 (herring); B56: 51 (lakes of Kamloops region); B72: 84 (Northwest Territories); B83: 123 (problems with pulp mill); B93: 47 (hair seals)
S205 (fish culture); S230, S250 (rainbow trout, Paul L.); S231 (coho salmon hatching); S238 (clams); S245 (molluscs); S258 (history in Canada); S259 (Atlantic salmon planting); S262 (Seal I. clams); S266 (fishery depletion); S267 (Canadian fisheries); S269, S275 (Atlantic salmon); S287, S288 (Pacific salmon); S292, S293, S294, S295, S296 (general discussions); S300 (in the northeast); S315 (fishery problems in B.C.); S318 (speckled trout on P.E.I.); S327, S378 (B.C. herring); S334 (B.C. recreational facilities); S339 (pink salmon); S364 (Pacific herring and halibut); S329 (Ungava Bay); S385 (speckled trout in N.B.)
NR10, NR11: 22 (lobsters)
NS2: 15, NS15: 34 (lobsters)

MARGAREE R., N.S.

J2: 299, J3: 323, J4: 48, 309 (birds)
B51, B57 (salmon); B58 (birds and salmon)
S205 (fish culture); S333 (salmon)

MARGOLIS, LEO

J10: 62; J11: 267, 319
S387

MARIE-VICTORIN, FRÈRE

J6: 458

MARKETING OF FISHERY PRODUCTS

C1918-20: 125 (dogfish and other selachians)
B1: 9 (American plaice); B2: 26 (lumpfish); B4: 10 (muttonfish); B10: 14 (lobster paste); B20: 51 (frozen haddock); B25: 24 (haddock); B33: 8, B43: 11 (lobster); B36: 5 (pilchards); B44, B60: 67 (oysters); B47: 18 (herring); B49: 1 (fresh halibut); B54: 23 (lingcod); B90: 7 (salmon); B98: 22 (beluga)
S299 (by-products)
NR18: 9 (lobsters)

MARKING (see Tagging)

MARSIPOBANCHII (LAMPREYS, HAGFISHES)

AF12d

MARTIN, J. RUSSELL

S48

MARTIN, NIGEL VERNON

J11: 5

MARTIN, WILLIAM HOWARD

C1911-14(1): 73; C7: 295

MASKINONGE

J8: 347

MASSET INLET, B.C. (see McClinton Creek)

MASTIGOPHORA (PROTOZOA)

PF1e

MATHER, VERA G.

S36

MATING EXPERIMENTS

NR16: 48 (lobsters)

MATURITY

C1914-15: 87 (hake), 95 (haddock); C3: 281 (spring salmon); C7: 255 (bivalves); C8: 2 (Coregonidae)

J1: 1 (copepods); J2: 41 (lobster); J3: 159 (herring); J4: 195 (sockeye), 233 (pink salmon); J6: 140 (*Paphia*), 281 (lobster); J7: 176 (lake trout); J8: 347 (maskinonge); J10: 314 (coho and sockeye), 326 (Arctic char), 413 (whitefish); J11 535 (haddock), 827 (lake trout)

B1: 12 (plaice); B3: 15 (angler); B21: 7 (Atlantic salmon); B25: 12 (haddock); B54: 21 (cod); B81 (L. Manitoba fish); B82: 4 (coregonine fish)

S72 (little-neck clam); S73 (butter clam); S223 (Atlantic salmon); S237 (kokanee and sockeye); S270 (Ont. salmon); S352 (finback whales)

NR6: 23 (haddock); NR7: 26, NR16: 42 (lobster); NR17: 29 (Atlantic capelin)

NS2: 3 (lobster)

MAVOR, JAMES WATT

C1911-14(1): 25; C1914-15: 145; C1917-18: 111; C1918-20: 125; C1: 101, 353

MAXWELL, BRIAN E.

J9: 164

MAYFLIES

C1911-14(2): 113, 131; C7: 177

MEAD, GILES WILLIS

J10: 560

MEAL (*see* Fish meal)

MEDCOF, JOHN CARL

J4: 287; J5: 253; J6: 209, 449, 498; J7: 219 B75
S277; S284; S301

MEDUSAE (*see* Hydrozoa; Jellyfish)

Melamphaes cavernosus

B68: 142

Melamphaes rugosus

B68: 141

MELAMPHID, CRESTED

B68: 141

MELAMPHID, HIGH-SNOUTED

B68: 142

Melanogrammus aeglefinus (*see* Haddock)

Menidia notata

S234

MERGANSERS (*see* Birds)

MERICISTIC CHARACTERISTICS (*see* Morphology)

Merluccius bilinearis

NS8: 27

Merluccius productus (*see* Hake)

Mesoplodon densirostris

S235

METABOLISM (*see also* Physiology)

J6: 45 (bacteria)

S388 (marine bacteria)

Microgadus proximus

B68: 131

Microgadus tomcod (*see* Tomcod)

MICROORGANISMS (*see also* Bacteria)

S370, S375 (role and control)

Micropterus dolomieu, *M. salmoides*

S144

Microstomus pacificus (*see* Sole, dover)

MIDGES (*see* Chironomidae)

MIDSHIPMAN

B68: 336

MIGRATION AND MOVEMENT

C1914-15: 115 (eel); C1915-16: 43 (coho); C1921: 106 (Pacific herring); C1: 7 (lumpfish), 455 (starfish); C3: 145 (*Littorina*), 170 (*Buccinum*), 265 (Pacific salmon); C4: 453, 471 (Pacific salmon); C5: 3, 37, 55 (sockeye); C6: 184 (whitefish fry), 241 (haddock); C8: 346 (sockeye), 433 (cod)

J1: 159 (Atlantic salmon), 269 (lobster); J2: 311 (sockeye), 383 (pink salmon), 391 (Atlantic salmon); J3: 26, 421 (sockeye), 403 (pink salmon); J4: 1, 96, 323 (Atlantic salmon), 69 (rainbow trout), 184, 192 (sockeye), 233 (pink salmon), 349 (herring) 491 (brook trout); J5: 84 (starfish), 164 (plankton), 176, 258, 471 (brook trout), 485 (Atlantic salmon) J6: 158 (coho, spring salmon), 164 (pilchard), 217 (pink salmon), 245 (*Salmo gairdneri*), 311, 399 (Atlantic salmon), 483 (sockeye); J7: 88 (sockeye), 417 (herring), 432 (Atlantic

salmon); J8: 103 (sockeye), 164, 241 (Pacific salmon), 374 (B.C. bottom fishes); J9: 304 (Pacific salmon), 450 (pink and chum salmon); J10: 1 (herring), 293 (coho), 326 (Arctic char), 459 (lemon sole), 548 (spring salmon and trout); J11: 107, 310 (Pacific salmon), 351 (Atlantic dogfish), 362 (salmon parr), 472 (and sense of smell, in coho), 550 (cutthroat trout)
B14, B15, B26, B27 (Pacific salmon); B16: 3 (sockeye); B21: 6, B51 (Atlantic salmon); B25: 9 (haddock); B31 (pink and chum salmon); B40 (coho); B41 (spring salmon); B57: 12 (Margaree R. salmon); B62: 16 (Pacific crab); B66, B74 (pink salmon); B79: 6 (trout); B86 (salmon at Moricetown Falls); B98 (beluga)
S42, S67 (sockeye); S131 (brown trout); S164 (lobster); S165, S168, S187, S192, S256, S269, S270, S275, S291, S298, S333 (Atlantic salmon); S171, S193, S221, S240, S247, S254, S260, S285, S327, S343, S363 (B.C. herring); S196, S220, S239, S246, S253, S261 (pilchard); S257, S268 (pink salmon); S293 (European fishes); S300 (Atlantic fishes); S321 (speckled trout—P.E.I.); S322 (Vancouver Island salmon); S356 (high dams and Pacific salmon)
NR1: 66 (Atlantic salmon); NR8 (lobster); NR14: 9 (Atlantic cod); NR12 (Atlantic salmon); NR15: 55 (Atlantic spiny dogfish)
NS15: 10 (lobster)

MILLAR, FREDERICK GRAHAM
J9: 329

MILLER, F. R.
C1906-10: 277

MILLER, RICHARD BIRNIE
J6: 334; J7: 176, 190; J11: 550
B72: 31; B95

MILLER'S THUMB (*Cottus cognatus*)
S144

MILNE, DONALD JOHNSTON
B86

MINERAL CONSTITUENTS
C1921: 125 (lobster)
J2: 469 (salmon and pilchard), 473 (coho)

MINK
B92 (fish as food)

MINNOWS
B56: 38; B94: 18
S144

MIRAMICHI R. AND BAY, N.B.
C1917-18: 149, 169 (diseased salmon);
C1918-20: 181 (new algae)
J1: 159 (Atlantic salmon)
B70 (smelt)
S336 (Greenland cod)

MIXING AND STRATIFICATION (IN NATURAL
WATERS)
J1: 133, 171, 227; J2: 141

MODELS, HYDROGRAPHIC
B83: 76 (Alberni Harbour)

Modiolus demissus (see also Mussels)
B77: 25

Mola mola (see Sunfish, ocean)

MOLLUSCS (see also Bivalves; Clams; Gastro-
poda; Mussels; Nudibranchiata; Oysters;
Pteropoda)
C1911-14(1): 43; C1911-14(2): 95
J9: 164 (vitamin B₁₂)

Molva molva
J11: 11

MOORE, LEONARD PATRICK
C7: 413

MOORHOUSE, VICTOR HENRY KINGSLEY
C7: 465

MORICETOWN FALLS, B.C.
B86 (salmon migration)

Morone americana (see Perch, white)

MORPHOLOGY
C1901: 20 (*Mya*), 55 (mackerel shark);
C1906-10: 277 (lobster); C7: 477 (elasio-
branch viscera); C8: 207 (*Raja*—arteries)
J1: 239 (*Raja*—nerves), 261 (*Raja*—clas-
pers), 469 (barnacles—nerves); J2: 209
(*Chironomus*); J5: 347 (herring); J6: 140
(*Paphia*), 209 (oyster), 419 (*Themisto*);
J7: 505 (*Sarcolaces*); J10: 76 (barnacles—
central nervous system); J11: 107 (nares)

of fishes), 130 (ear of fishes), 171 (meristic characters of yellowtail flounder), 652 (hybrid char), 904 (chars)

B1: 20 (plaice scales); B7: 9 (anglerfish viscera); B68: 8 (fish—general)

S1 (Isopoda); S2 (Argulidae); S4 (shrimps); S35 (lymphoid organ, spleen, etc., of shark); S36 (velar apparatus of lamprey); S39 (*Chirodotea*); S53 (brain of ratfish); S78 (ascidians); S99 (pancreas of skate); S100 (adductor muscle of scallops); S169 (hermit crabs); S199 (anterior setae of Polychaeta); S223 (thyroid gland of Atlantic salmon); S231 (fry of coho)

NR2: 55 (Atlantic capelin)

MORPHOMETRY (see Size)

Morrhua ductor

J11: 248

MORRIS, ROBERT J.

C1: 439

MORTALITY, FISHING (see Abundance, Exploitation)

MORTALITY, NATURAL OR TOTAL (see also Lethal limits)

C1918-20: 29 (B.C. marine organisms—severe winter); C2: 135 (trout fry), 245 (shad); C3: 367 (trout); C5: 203 (trout fry), 361 (*Enchelyopus*); C6: 180 (whitefish eggs)

J3: 26 (sockeye); J4: 184 (sockeye); J5: 43 (theory), 84 (starfish), 172 (salmon lice), 476 (stream fishes—heat); J7: 224 (pink salmon); J8: 103 (sockeye), 383 (brook trout), 479 (flounders); J9: 450 (pink and chum salmon); J10: 293 (coho), 413 (whitefish); J11: 298 (whitefish), 339 (sockeye), 362 (salmon parr), 827 (lake trout)

B1: 25 (plaice); B5: 8 (lobster); B60: 38, 74 (oysters)

S40 (marine animals); S251 (rainbow trout); S283 (P.E.I. oysters—disease); S289 (Atlantic salmon); S292 (natural vs. fishing); S293 (European work); S294 (salmon); S295 (young sockeye); S296 (survey); S340 (related to predators); S359 (effect on population); S364 (Pacific herring and halibut)

MORTALITY IN SHIPPING LIVE ANIMALS

C1911-14(1): 73 (freezing mummichog)

B33 (lobster); B44 (oyster)

MORTON, BETTY HELEN

J6: 326

MOSER R., N. S.

J5: 176 (sea-running brook trout)

MOSHER L., SASK.

B95: 33 (cisco control)

MOSSOP, BESSIE K. E.

C1921: 15

S15

MOTTLEY, CHARLES McCAMMON

C4: 471; C8: 253

J2: 359; J3: 169; J4: 69

S131; S141; S163; S214; S215; S230;

S249; S250; S251

MOULDS

J5: 276, 287; J6: 303; J7: 104, 128; J11: 901

MOULT

J6: 152 (lobster)

B5: 6, B43: 11 (lobster); B30: 17 (crabs)

NR18: 12 (lobster)

NS15: 24 (lobster)

MOUNCE, IRENE

C1: 39, 81

MOUNCEY, YVONNE ADELAIDE

J6: 359

MOVEMENTS (see Migration)

MUD DEPOSITS (ON NETS)

C7: 295

MUMMICHOG (*Fundulus heteroclitus*)

C1901: 12; C1911-14(1): 73; C7: 45

S57; S70; S234

MUNRO, JAMES ALEXANDER

B17: B55

S212; S224; S227

MURPHY, JOHN FRANCIS

NS10

MURRAY, J. C.

C1901: 18

MUSCLE (see also Flesh)

C1918-20: 185 (lobster); C3: 437, 457, 467

(fish); C4: 95 (clam), 227 (haddock, lob-

ster, clam), 501 (skate); C6: 1, 375 (haddock), 341 (dogfish); C7: 147 (haddock); C8: 123, 131 (haddock), 311 (halibut), 531 (cod, etc.)
J4: 63 (cod), 229 (N.S. fish); J5: 32, 197, 203 (cod), 267, 411 (halibut); J6: 152 (lobster), 403 (cod); J7: 585 (cod), 594, 599, 608 (fish); J8: 325; J9: 388 (cod)
S52 (Atlantic fishes); S63 (haddock and other trawl-caught fish); S81 (B.C. fishes); S100 (scallop)

MUSKELLUNGE
J8: 347

MUSSELS, FRESHWATER
C1917-18: 75

MUSSELS, MARINE
C1921: 15; C4: 121
J2: 89; J11: 816
B60: 54; B75: 1; B77: 15
S15

Mustelus canis (see Dogfish, Atlantic smooth)

MUTTONFISH (see Eelpout)

Mya arenaria (see Clams, Atlantic)

Myctophum californiense
B68: 113

Mylocheilus caurinum (see Peamouth chub)

MYOSIN
J7: 585, 599

Myoxocephalus (see also Sculpins)

Myoxocephalus aeneus
S234

Myoxocephalus octodecimspinosis
S234

Myoxocephalus polyacanthocephalus
B68: 259

Myoxocephalus scorpius groenlandicus
B73: 3

MYSIDACEA (CRUSTACEANS)
C8: 181 (Pacific)
J4: 281 (Atlantic)
B78: 22 (*Mysis*—Great Slave L.)

Mytilus edulis (see Mussels)

N

NADEAU, ARISTIDE
J4: 355; J5: 121

NANAIMO, B.C. (see Departure Bay)

NASS R., B.C.
C7: 295 (mud on gill nets)

NATIONAL PARKS
S334 (recreational resources)

NAUBERT, JACQUES
B75

Nautichthys oculo-fasciatus
B68: 266

NEAVE, FERRIS
C4: 157, 185, 197, C7: 177
J6: 140, 158, 245; J9: 450
B74; B84
S157; S255; S262; S263; S286; S322;
S334; S339; S382; S391

Nectoliparis pelagicus
B68: 306

NEEDLERFISH
S234 (Malpeque Bay)

NEEDLER, ALFRED WALKER HOLLINSHEAD
C3: 307, 423; C4: 265; C6: 241
J5: 8, 236, 253
B22; B44; B48; B75
S234; S272; S283; S296

NEEDLER, ALFREDA BERKELEY (see also
Berkeley, A. A.)
C7: 283; C8: 237
J4: 88; J5: 8, 361, 459; J7: 490
B25; B75
AF10n

NEILANDS, JOHN BRIAN
J6: 368; J7: 94

NELSON R., MAN.
B79 (trout)

NELSON, JULIUS
C1915-16: 53

NEMATODA, PARASITIC
C8: 71, 161, 169
J10: 539; J11: 267, 673, 894
B98: 13
S387

Nemichthys avocella
B68: 122

Neoliparis atlanticus
S203

Neoscopelarchoides dentatus
B68: 118

NERVOUS SYSTEM (*see* Physiology)

NETS (*see* Fishing methods)

NEW BRUNSWICK (*see also* individual localities)
J1: 171 (tidal mixing, Reversing Falls); J9: 213 (current in Grand Manan Channel)

NEWCOMBE, CHARLES F.
C1917-18: 5

NEWFOUNDLAND (*see also* individual localities)
J5: 23 (Pteropoda); J11: 351 (dogfish tagging)
NR 12 (salmon obstructions)

NEWTON, DOROTHY E.
C1: 377

NEWTON, MERLIN V. B.
C7: 341

NEY, PHYLLIS WINIFRED
J7: 563
S310

NICHOLLS, JOHN V. V.
C7: 45, 447; C8: 137, 145, 207

NICOLA L., B.C.
B42: 28 (productivity)

NILE CR., B.C.
J11: 933

L. NIPIGON, ONT.
C6: 184 (whitefish)

NITRATE (*see also* Sodium nitrate)
J2: 1

NITRITE (*see also* Sodium nitrite)
J8: 195

NITROGEN
J7: 238
S116

NOBLE, C.
C2: 115

NOOTKA SOUND, B.C.
J3: 43 (oceanography)

NORRIS, MARGARET ELLEN
S388

Notacanthus chemnitzii
S235

Notacanthus phasganorus
S226

Notemigonus crysoleucas
S213

Notorynchus cepedianus (*see* Shark, spotted cow)

NOWA SCOTIA (*see also* individual localities)
J2: 41 (lobsters); J3: 348 (new annelid)
J5: 105 (cod); J6: 498 (worm in oysters);
J7: 95 (thiaminase in animals), 248 (fertilization of streams); J11: 171 (yellowtail flounder), 454 (polychaetes)

NUDIBRANCHIATA (*see also* Gastropoda)
S12, S30, S49 (Pacific)

NUTRIENTS (IN WATER)
J1: 299; J10: 253, 283

NUTRITIVE VALUE (*see also* Vitamins)
J2: 439 (sockeye and pink salmon), 457 (pilchard), 461 (lingcod), 463 (canned coho), 469 (canned salmons and pilchard), 473 (coho), 477 (B.C. oysters); J5: 344 (B.C. crabs, shrimps, clams); J7: 35 (lingcod, halibut, lemon sole, Pacific salmon), 94 (aquatic animals), 513 (Pacific herring, salmon, rockfish), 563 (meal, stickwater, solubles, liver, viscera); J8: 117 (Pacific salmon); J9: 129 (cod liver), 164 (invertebrates); J10: 64 (herring meal); J11: 355 (cod liver residues)
B25: 28 (haddock); B46 3 (pilchard oil); B92 (fish for mink)
S162 (canned salmon); S305, S332 (fish); S373, 374 (herring meal)

NUTT, DAVID CLARK
J10: 177

NYLON NETS (*see* Fishing methods)

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OBITUARIES

J4: 228 (W. T. MacClement), 308 (J. Playfair McMurrich); J5: 1 (Philip Cox); J6: 204 (John Dybhavn), 207 (Arthur Willey), 459 (Frère Marie-Victorin); J7: 213 (A.T. Cameron)

OBSTRUCTIONS

B86 (Moricetown Falls, B.C.); B101 (Babine R., B.C.)
NR12 (Newfoundland rivers)

OCEANOGRAPHY, ARCTIC

J8: 378
B88
S304; S361

OCEANOGRAPHY, ATLANTIC

C1906-10: 281; C1914-15: 55, 145, 151, 163; C1915-16: 72; C1917-18: 127, 295; C1: 101, 353; C4: 137, 271; C6: 255; C7: 91 (Hudson Bay), 256; C8: 398
J1: 121, 133, 227, 279; J2: 115, 141; J3: 189; J4: 339, 378, 424; J5: 236, 377; J6: 460; J7: 1, 355; J8: 332; J9: 223; J10: 97, 146, 148, 155, 177, 394; J11: 32, 42, 198, 229, 404, 419
B5: 10; B22: 7
S20; S21; S27; S43; S44; S48; S136; S139; S178; S182; S201; S203; S204; S210; S211; S226; S271; S316; S317; S346; S358
NR5: 13; NR16: 6

OCEANOGRAPHY (GENERAL)

C7: 73 (absorption of light by water)
B39: 6 (polluted waters)
S103 (measuring ultra-violet light); S105 (energy value of sunlight and moonlight); S172 (chlorinity-salinity conversion); S177 (corrections for reversing thermometers); S189 (colorimetric sea-water analyses); S191 (units for sea-water analysis); S241 (danger of silver nitrate crystals with alcohol); S293, S294 (effect of conditions on fish); S306 (meteorology, geophysics, etc.); S345 (fresh water entering the sea); S347 (oxygen determination); S355 (new water-bottle)

OCEANOGRAPHY, PACIFIC

C1914-15: 133; C1918-20: 35; C1: 41, 73, 81; C4: 9; C7: 295
J3: 43, 93; J5: 398; J8: 378; J9: 42; J10: 125; J11: 14, 501, 799, 853

B15: 7; B34: 12; B39: 3; B80: 17; B83: 1; B91: 3
S19; S56; S67; S75; S83; S112; S123; S174; S190; S344; S345; S376

Occa verrucosa

B68: 283

OCTOPUSES

S245 (B.C. species)

ODONATA (see Insects, aquatic)

ODOURS, REACTION TO

J11: 107 (fishes), 310 (coho and spring salmon), 472 (coho)

O'DONOGHUE, CHARLES HENRY

C1: 143, 441, 455; C3: 47, 247
S8; S11; S12; S30; S35; S49

O'DONOGHUE, ELSIE

C1: 143; C3: 47
S12

Montopyxis trispinosus (see Sea-poacher, pigmy)

ODIERS, ERIC

S119

Oil. (see also Bodying; Decolorization; Drying; Hydrogenation; Liver oil; Pigments; Unsaponifiables; Viscera oil; Vitamins)

OIL, ANALYTICAL VALUES

C8: 507
J2: 285; J4: 478
B89: 359
S87: S152

OIL, CHEMICAL REACTIONS

C7: 505
J2: 13
B37: 21; B59: 107, 420; B89: 107

OIL, COMPOSITION

B37: 39; B59: 31; B89: 26

OIL, DETERIORATION

B37: 25; B59: 175; B89: 168

OIL, FATTY ACIDS OF

J4: 59; J6: 109; J9: 393
B37: 16; B59: 25; B89: 18
S150; S151; S152; S331; S349; S380

OIL, INDUSTRIAL USES B37: 97; B59: 320; B89: 286	<i>Oligocottus maculosus</i> B68: 269
OIL, METABOLISM OF FATS B59: 97; B89: 98	<i>Oligocottus rimensis</i> B68: 268
OIL, NUTRITIONAL USES J7: 109 B37: 87; B46: 1; B59: 310; B89: 273 S299	<i>Oligocottus snyderi</i> B68: 270
OIL, OTHER COMPONENTS B59: 83; B89: 84	<i>Oncorhynchus</i> (see Salmon, Pacific)
OIL, PHYSICAL PROPERTIES B37: 21; B59: 152, 420; B89: 145 S87; S150; S151	<i>Oncorhynchus gorbuscha</i> (see Salmon, pink)
OIL, PIGMENTS B59: 97; B89: 78	<i>Oncorhynchus keta</i> (see Salmon, chum)
OIL, PROCESSING C8: 321 J1: 487; J8: 189 B59: 280; B89: 241 S330	<i>Oncorhynchus kisutch</i> (see Salmon, coho)
OIL, PRODUCTION B37: 51; B46: 1; B59: 210; B89: 180 NS3: 5; NS11: 7	<i>Oncorhynchus nerka</i> (see Salmon, sockeye)
OIL, PROPERTIES OF INDIVIDUAL SPECIES (see also under each species) B37: 125; B59: 383, 409, 412; B89: 312, 345, 347 NS3: 20; NS5: 5	<i>Oncorhynchus nerka kennnerlyi</i> (see Kokanee)
OIL, REFINING B37: 72; B59: 256; B89: 215 S330	<i>Oncorhynchus tshawytscha</i> (see Salmon, spring)
OIL, SPECIFICATIONS B89: 375	<i>Oneirodes bulbosus</i> B68: 338
OIL, VITAMINS J11: 357(B) B59: 54; B89: 46 S55 (A); S86 (D); S97 (D); S299 (general)	ONOFREY, EVA S379; S388
OKANAGAN LAKES, B.C. B56: 8 (physical and chemical conditions), 17 (bottom fauna), 27 (fish), 39 (whitefish), 51 (fish cultural problems)	ONTARIO (see also individual localities) C1917-18: 75 (freshwater mussels); C2: 135 (trout planting in two creeks); C6: 165 (whitefish, Bay of Quinte), 445 (whitefish) J11: 362 (salmon in Duffin Creek)
OLIGOCHAETA (see also Annelida) J9: 204	L. ONTARIO C1902-05: 22 (effects of dynamite), 46 (effects of sawdust); C6: 225 (ciscoes) J9: 325 (temperature)
	OPAH B68: 138
	<i>Ophiodon elongatus</i> (see Lingcod)
	OPHIURA (BRITTLE STARS) C3: 317
	ORGANS (see Kidney; Liver; Viscera, etc.)
	OSBURN, RAYMOND CARROLL C7: 361
	OSMERIDAE (see Smelts)
	<i>Osmerus mordax</i> (see Smelt, American)

OSMOPHILISM
J11: 901 ("dun" mould)

OSTRACODA (CRUSTACEANS)
C2: 295; C6: 397
J9: 16; J11: 245
S9; S50; S104

Ostrea gigas, *O. lurida* (see Oysters, Pacific)

Ostrea virginica (see Oysters, Atlantic)

OTARIIDAE (see Seals, fur)

OTOLITHS (see Age determination)

OUTRAM, DONALD NOEL
S343; S363

OXYGEN DETERMINATION (see Limnology; Oceanography; Pollution)

OXYGEN REQUIREMENTS
J11: 933 (salmon eggs)

Oxylebius pictus
B68: 235

OYSTER FARMING (see Culture)

OYSTERS (ATLANTIC)
C1906-10: 217, 281; C1914-15: 55, 145;
C1915-16: 53; C7: 283
J4: 287; J5: 253, 361; J6: 209, 449, 498;
J7: 545
B22; B34: 29; B44; B48; B60; B77: 28
S277; S283

OYSTERS (PACIFIC)
J2: 477
B34
S132; S186; S245

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PAINT FILMS (see Films)

PALATABILITY (OF FISH, ETC.—see also Quality)
C7: 57 (haddock as dog food)
J7: 449 (cod fillets)
B1: 12 (plaice); B2: 22 (lumpfish); B3: 9
(angler); B4: 10 (muttonfish); B10: 17
(lobster paste)

Pallasina barbata
J9: 143

PANCREAS
C7: 1
S17; S22; S99

PANDALIDS, *Pandalus* (see Shrimps)

PANTOPODA (ARTHROPODA)
AF10n

Paphia (see Clams, Pacific)

Paralichthys oblongus
NS14: 21

Paraliparis deani
B68: 305

PARASITES (see also Cestoda; Copepoda; Nematoda; Protozoa; Trematoda)
C1917-18: 152, 171; C2: 459; C5: 193;
C6: 445
J7: 186; J8: 207; J11: 267 (on marine mammals), 673 (B.C. fishes)
B4: 11; B62: 13; B78: 22; B93: 37; B98: 13
S94; S108; S111; S149; S202; S243; S311
NR9 (on trout), NR16: 39 (on lobster),
NR17: 135 (on capelin)

Parophrys reticulatus (see Sole, lemon)

PASSAMAQUODDY BAY
C1901: 1 (Atlantic Biological Station), 19
(clams), 41 (flora); C1906-10: 1 (Atlantic Biological Station), 83 (crustaceans), 243 (diatoms), 265 (flora), 281 (oysters and oceanography); C1911-14(1): 1 (plankton), 25 (Sporozoa), 43 (Mollusca), 47 (fungi); C1914-15: 151 (oceanography); C1915-16: 1 (winter plankton); C1917-18: 175 (smoking haddock), 295 (oceanography); C1918-20: 49 (plankton), 63 (diatoms), 99 (spoilage); C1921: 17 (mussels); C2: 307 (griddle); C4: 527 (free-living copepods); C5: 361 (*Enchelyopus*), 423 (parasitic copepods); C7: 127 (silica in water), 277 (new polychaete); C8: 357 (diatoms)

J2: 89 (mussels), 95, 401 (herring); J5: 365 (copepods as herring food); J10: 1 (herring), 97 (oceanography); J11: 816 (parasitic copepods), 963 (flounder parasites)

S3 (copepods); S5 (fauna); S15 (mussels); S32 (diatoms); S111 (protozoan fish parasites); S159 (rare fishes); S211 (international investigations); S346 (sardines)

PASTE
B10 (lobster)

PATHOLOGY (see also Diseases)
C2: 129

PATTERSON, OLIVE GAIR
C1917-18: 175

PAUL L., B.C.
J4: 69 (rainbow trout)
B42: 3 (productivity studies)
S214, S215, S230, S250, S251 (rainbow trout)

PEAMOUTH CHUB (*Mylocheilus caurinum*)
B55: 34 (food); B56: 36
S144

PEARL-EYE
B68: 118

Pecten (see Scallops)

PENTOSE COMPOUNDS (see Carbohydrates)

Peprilus simillimus (see Pompano, California)

PEPTONES
J7: 552

Perca flavescens (see Perch, yellow)

PERCH, BLUE (*Taeniotoca lateralis*) (see Sea-perch, blue)

PERCH, SILVER (*Phanerodon furcatus*) (see Sea-perch, white)

PERCH, WHITE (*Morone americana*)
J7: 22
S213

PERCH, YELLOW (*Perca flavescens*)
B81: 4; B94: 20
S144; S213

Percopsis omiscomaycus (see Trout-perch)

PERIODICITY (see Abundance)

PERRY, H. MARGARET
S41

Petromyzon marinus (see Lamprey, sea)

pH (see Hydrogen-ion)

Phanerodon furcatus (see Sea-perch, white)

PHOCIDAE (see Seals, hair)

Pholis gunnellus
S234

Pholis laetus
B68: 180

Pholis ornatus
B68: 179

PHOSPHORUS COMPOUNDS
J6: 152 (lobster); J7: 608 (skeletal muscle);
J10: 253 (phytoplankton), 283 (plankton)

PHOTOSYNTHESIS
C6: 41 (marine algae)

PHYSICAL CONDITIONS OF WATER (see Limnology; Oceanography; Physiography)

PHYSICS, GENERAL
B11

PHYSIOGRAPHY
C1906-10: 4 (St. Andrews, N.B.), 295 (Departure Bay, B.C.); C1915-16: 109 (St. Croix R. and Passamaquoddy Bay, N.B.)
J8: 1 (Great Slave L.)
B42: 3 (Paul L., B.C.); B56 (Okanagan L., B.C.); B57: 4 (Margaree R., N.S.); B72 (N.W.T.); B83: 5 (Alberni Inlet, B.C.); B84: 3 (Cowichan R., B.C.); B86 (Morice-town Falls, B.C.); B94: 2 (Arctic and Subarctic)
S72 (B.C. clam districts); S123 (B.C. fiords); S163 (Jones L., B.C.); S178 (Scotian shelf); S270 (Ontario salmon streams); S318 (P.E.I.)

PHYSIOLOGY, CIRCULATORY SYSTEM (see also Blood)
C1902-05: 24; C5: 83; C7: 17, 31, 439; C8: 207
S47; S53; S119

PHYSIOLOGY, DIGESTION
C4: 107, 317; C7: 1, 11, 45, 57
J1: 145, 251, 497; J2: 401; J5: 217
S57; S70; S71; S78; S99; S216; S377

PHYSIOLOGY, GENERAL
B85: 19 (Pinnipedia)
S39 (*Chiridotea*); S58 (dogfish reactions to salinity); S68 (asphyxial hyperglycemia)

in lingcod); S95 (Asciidae); S169 (hermit crabs); S207 (overexertion causing death); S388 (nutrition of marine bacteria)

PHYSIOLOGY, HUMAN
J5: 211

PHYSIOLOGY, INTEGUMENT AND SKELETON
J6: 209

PHYSIOLOGY, NERVES AND MUSCLES
C1902-05: 29; C1906-10: 277; C4: 495;
C6: 335; C7: 31, 447, 477; C8: 145
J1: 239, 251, 261
S8; S33; S47; S51; S53; S66; S100; S157

PHYSIOLOGY, RESPIRATORY SYSTEM
C1901: 10; C1902-05: 24; C2: 110; C5:
193; C6: 315; C7: 71
J4: 267; J5: 485; J6: 435
S7; S16

PHYSIOLOGY, REPRODUCTION
C7: 283
J1: 261; J6: 140, 252; J8: 125

Phytichthys chiru
B68: 174

PICKARD, GEORGE LAWSON
J10: 125

PICKLING (see also Salt fish)
C1: 279 (herring)
B19 (mackerel); B47: 21, B52 (herring)

PIGMENT
C1901: 11; C1915-16: 86; C6: 188, 230,
J3: 469; J4: 55, 209; J5: 276; J7: 184;
J9: 169; J10: 320
B59: 76; B89: 78

PIKE, GORDON CHESLEY
J8: 275; J10: 320
S348; S352; S393

PIKE, NORTHERN (*Esox lucius*)
B72: 41, 81; B94: 19
S144

PIKE-PERCH (see Walleye)

PILCHARD (BIOLOGY)
C7: 245
J6: 164
B36; B38; B68: 77
S120; S128; S176; S183; S194; S196;
S220; S239; S246; S253; S261; S264

PILCHARD (TECHNOLOGY)
C6: 355, 365 (oil); C7: 413 (oil), 521 (oil);
C8: 321 (oil)
J1: 487 (oil); J2: 13 (oil), 457, 469; J3: 177;
J4: 55, 59 (oil); J5: 428, J6: 109 (oil)
B35; B36: 19, B37: 125 (oil); B39; B46,
B59: 383, B89: 316 (oil)
S87, S97 (oil)

PINHEY, KATHLEEN F.
C3: 179, 331

PINK SALMON (see Salmon, pink)

PIPE-FISH (ATLANTIC) (*Siphonostoma fuscum*)
S234

PIPE-FISH (PACIFIC) (*Syngnathus griseo-lineatus*)
B68: 127

PISCICIDES (see Poisons)

PITUITARY GLAND
J11: 57 (of salmon)

PIVNICK, HILLIARD
J7: 378

PLAICE, AMERICAN (*Hippoglossoides platessoides*)
J10: 539 (parasite); J11: 954 (trematodes)
B1
S235
NR4: 8
NS14: 12

PLANKTON (ARCTIC)
J6: 419; J9: 223
B73
S3; S361

PLANKTON (ATLANTIC)
C1902-05: 1, 29; C1906-10: 221; C1911-14(1): 1, 11; C1915-16: 1; C1917-18: 217; C1918-20: 49, 85, 93; C3: 179, 331; C8: 357
J1: 279; J2: 95, 422; J3: 189; J5: 164; J7: 502; J9: 223; J10: 211; J11: 239
S3; S6

PLANKTON, GENERAL
J4: 19, J10: 238 (sampling)
S121 (growth related to silica); S158 (statistical treatment of sampling)

PLANKTON (INTERIOR WATERS)

C2: 359; C4: 343; C5: 381
J1: 67; J4: 19, 33; J5: 138, 164; J7: 22;
J8: 383; J9: 417; J10: 224, 238, 253, 283;
J11: 479, 638
B42: 16, 25, 27, 28, 29; B56: 14, 58; B72:
36, 54, 74
S138; S228; S297

PLANKTON (PACIFIC)

C1: 81; C2: 531; C7: 249
S80; S98; S123

PLASTIC (FROM PROTEIN)

C8: 531

Platichthys stellatus (see Flounder, starry)

PLANTINGS OF FISH (see Hatcheries)

PLECOPTERA (see Stoneflies)

Pleuronichthys coenosus

B68: 320

Pleuronichthys decurrens (see Sole, curl-fin)

Pneumatophorus diego

B68: 163

POINT ATKINSON, B.C.

J11: 22, 803 (tidal measurements)

POISONS, GENERAL (see also Disinfectants)

C4: 1 (for woodborers); C6: 423 (metals of
water sampling bottle); C7: 67 (fresh
water toxic to *Pseudopleuronectes*)
J7: 490 (toxicity in shellfish); J8: 486 (metals
toxic to lobsters); J10: 253 (phyto-
plankton autotoxins and antibiotics)
B75 (found in shellfish)

POISONS, FOR LAKES

J7: 22 (copper sulphate in Tedford L., N.S.)
S137, S213 (copper sulphate in L. Jesse,
N.S.); S138, S206 (copper sulphate in
various lakes); S229 (copper sulphate and
rotenone in N.S. lakes); S242 (rotenone
in Potter's L., N.B.); S311 (survey of use
in Canada)

Polistotrema stouti

B68: 49

Pollachius virens (see Pollack)

POLLACK, POLLOCK

C1901: 61; C1917-18: 111; C3: 469; C8:
531 (plastic from muscle)
B7: 7; B59: 407 (oil), B89: 340 (oil)
S54
NS8: 24

POLLUTION OF WATER

C1901: 9 (pulpmill); C1902-05: 37, 111
(sawdust); C2: 69, C5: 436 (sewage)
J5: 1, J7: 55 (sewage)
B39 (pilchard waste); B60: 78 (oysters as
carriers); B72: 92 (N.W.T.); B83 (pulp-
mill)

POLYCHAETA (see also Annelida)

C1: 203 (near Nanaimo, B.C.), 441 (*Eudistyla gigantea*); C2: 285, C3: 405, C4: 305,
C6: 65 (near Nanaimo); C7: 277 (*Haplobranchus atlanticus*), 309 (west coast of
Vancouver Is.)
J3: 348 (*Hemipodia canadensis*); J6: 120
(Hudson Bay), 472 (Bay of Fundy), 498
(*Polydora*); J7: 363 (*Odontosyllis* at
Bermuda); J8: 488 (*Trypanosyllis ingens*);
J10: 85 (*Micronereis nanaimoensis*); J11:
326 (*Dodecaceria fewkesi*), 454 (new
records), 507 (eastern Arctic)

AF9b

PF9b(1) (Errantia); PF9b(2) (Sedentaria)
S5 (Atlantic Biological Station); S10 (man-
ganese in tubes); S13 (pentose); S14
(organic constituent of tubes); S65 (new
Chaetopterida); S106 (green bodies);
S153 (Spionidae); S181 (Syllidae); S199
(*Rhamphobrachium longisetosum*); S307
(Polychaeta Sedentaria); S320 (*Potam-
ethus elongatus*); S353 (swarming); S371,
S380 (n-octyl alcohol and fatty acids in
Eudistyla)

Polypera greeni

B68: 301

POLYZOA (see Bryozoa)

POMFRET

B68: 143

Pomolobus pseudoharengus (see Alewife)

Pomoxis sparoides

S144

POMPANO, CALIFORNIA

B68: 201

S302

POPULATION STUDIES (*see* Abundance; Statistics; etc.)

PORGY

B68: 154

Porichthys notatus
B68: 336

Poroclinus rothrocki
B68: 187

Poronotus triacanthus (*see* Butterfish)

PORPOISE
B59: 416 (oil)

PORT JOHN, B.C.
J11: 69 (salmon behaviour), 624 (limnology)

POTTER, GILBERT DAVID
J11: 63

POUT (*see* Bullhead; Burbot; Eelpout; etc.)

PRawns (*see* Shrimps)

PREDATORS (*see also* Birds)

C1915-16: 41 (of coho); C1917-18: 5 (sealions); C1921: 30 (of mussels); C1: 291 (of fish near Nanaimo); C2: 138 (of trout fry), 411 (of sockeye), 458 (of cunner); C3: 367 (of trout); C5: 80 (of sockeye), 203 (of trout)
J2: 89 (of mussels); J5: 293, 315 (of salmon); J9: 450 (of pink and chum salmon); J10: 211 (theory); J11: 362 (on salmon parr), 609 (effect on survival)
B25: 21 (of haddock); B30: 17 (of crabs); B60: 43 (of oysters); B93: 47 (seals)
S50 (of Entomostraca); S141 (pond culture); S148 (of Pacific salmon); S160 (fur seals); S205 (fish culture); S295 (of sockeye); S340 (theory); S341 (of trout); S385 (control at Crecy L., N.B.)
NR17: 132 (of Atlantic capelin)

PREDICTION (*see* Abundance)

PRÉFONTAINE, GEORGES
J6: 458

PRESERVATIVES (FISHERY PRODUCTS)

J3: 439; J4: 327, 355; J5: 36, 121, 148, 244, 249, 265, 276; J6: 17, 63, 233, 257, 349, 441; J7: 101, 137, 155, 221, 237, 421, 461, 536; J10: 69
B100: 26
S222; S337; S370; S375

PRESS LIQUOR (*see* Stickwater)

PRIEST-FISH

B68: 209

PRINCE ALBERT PARK, SASK.

J2: 227 (physical and chemical studies)

PRINCE, EDWARD ERNEST

C1901: Preface, 1, 55; C1902-05: iii, 95, 121; C1906-10: v; C1911-14(1): i; C1911-14(2): i; C1915-16: v, 86; C1917-18: v; C1918-20: 5

J3: 186

PRINCE EDWARD ISLAND (*see also* individual localities)

C1906-10: 217 (oysters and clams); C1914-15: 55, C1915-16: 53 (oysters)
S278, S279 (ponds in National Park); S283 (oyster disease); S318 (speckled trout)

Prionace glauca (*see* Shark, blue)

Prionistius macellus

B68: 261

Prionotus carolinus

S159

PRITCHARD, ANDREW LYLE

C5: 467; C6: 225
J2: 383; J3: 403; J4: 141, 233; J6: 217, 392; J7: 224
B14; B31; B40; B41; B65; B66
S129; S148; S232; S236; S248; S268; S287; S288

PROCESSING (*see also* Freezing; Pickling; Salt fish; Smoking)

B9 (dried fish); B10 (lobster paste); B19: 6 (pickled mackerel); B20 (frozen haddock); B37, B59: 256, B89: 215 (oils); B61: 63 (grading oysters); B90: 13 (salmon)
NS1: 18 (various methods for codfish)

PRODUCTIVITY (*see also* Abundance; Limnology)

J8: 369 (clams), 383 (Charlotte Co. lakes, N.B.); J10: 224 (plankton in Western lakes); J11: 624 (Port John L., B.C.)
B42: 1 (Kamloops lakes); B56: 19 (Okanagan L.); B72: 87 (N.W.T.)
S37 (of lakes); S295 (method of computation for fishes)

Prosopium (ROUND WHITEFISHES)

C8: 6 (*quadrilaterale*)
J5: 131, 337 (*williamsoni*); J10: 51 (*cylindraceum*)
B32: 44, B55: 37, B56: 39 (*williamsoni*);
B72: 41, B82: 1, B94: 16 (*cylindraceum*)
S144 (*quadrilaterale*, *williamsoni*)

PROTEIN FRACTIONS

J7: 585 (extraction), 594 (colorimetric estimation), 599 (denaturation by freezing)

PROTEINS (see also Nutritive value)

C1921: 125 (lobster); C4: 325, C6: 1 (haddock); C8: 311 (halibut), 531 (plastic from)
J3: 177 (pilchard stickwater); J4: 412 (Atlantic cod); J7: 35 (lingcod, lemon sole, Pacific salmon, halibut); J8: 74 (Maillard reaction), 325 (Atlantic cod);
J9: 129, 390 (Atlantic cod)
S299 (by-products); S324 (denaturation);
S335 (separation of cobalamines); S351 (Maillard reaction)
NS11: 11 (fish meal)

PROTOZOA (see also Flagellata, Foraminifera)

C1911-14(1): 25; C1914-15: 83; C2: 507, 531; C7: 213
J6: 419; J7: 502; J11: 673
PF1a (Lobosa), 1b (Reticulosa), 1c (Heliozoa), 1d (Radiolaria); PF1e (Mastigophora); PF1f (Ciliata), 1g (Suctoria)
S11; S28; S76; S88; S111; S166; S243
NR5 (*Ceratium*)

PROW-FISH

B68: 198

PROXIMATE ANALYSIS (see Chemical composition)

Psetlichthys melanostictus

B68: 313

Pseudacris nigrita septentrionalis

B94: 25

Pseudomonas (see Bacteria)

Pseudopleuronectes americanus (see Flounder, winter)

Pseudopleuronectes dignabilis

NS14: 19

Psychichthys affinis

S226

Psychrolutes paradoxus

B68: 278

PTEROPODA

J5: 23; J11: 244

Ptilichthys goodei

B68: 189

***Ptychocheilus oregonense* (see Squawfish, Columbia)**

PUBLICATION LISTS

C1921: 167
B28; B87

PUDDLING

S301 (by gulls)

PUGSLEY, LEONARD IRVING

J4: 312, 396, 405, 472; J5: 344, 428

PULP-MILL POLLUTION (see Pollution)

PUMPKINSEED (*Lepomis gibbosus*)

C5: 457
S144

Pungitius pungitius

S234

PYCNOGONIDA (ARTHROPODS)

J5: 459
S126

PYLORIC CAECA (see also Enzymes; Vitamins A and D)

J3: 473; J6: 392

Q

QUAHOGS (see also Clams, Atlantic)

C1914-15: 73
J7: 545

QUALITY OF FISH (see also Palatability; Trimethylamine)

J4: 162 (canned salmon); J5: 197 (Atlantic cod); J6: 303 (dehydrated fish)
B76 (whitefish); B100 (fresh fillets)
S309 (fresh and frozen fish); S324 (frozen and stored fish)

QUAYLE, DANIEL BRANCH
J4: 53; J6: 140; J8: 369
S238; S245

QUEBEC (see also individual localities)
C3: 235 (parasite of pike-perch)

QUEEN CHARLOTTE Is., B.C. (see also McClinton Creek)
J1: 503 (hydroids)
B40: 3 (tagging coho); B41: 4 (tagging spring salmon); B65: 4 (food of spring and coho salmon); B91: 1 (crabs on Graham Is.)
S147 (hydroids)

QUIGLEY, JOHN PAUL
S58

QUILL-FISH
B68: 189

QUILL LAKES, SASK.
C1921: 155 (diatoms); C1: 125 (fishery possibilities)

R

RADCLIFFE, ROLAND WOOTTON
J8: 67

RADIOLARIA (PROTOZOA)
PF1d

Radulinus asprellus
B68: 263

RAG-FISH, BROWN
B68: 333

RAG-FISH, FAN-TAILED
B68: 332

RAINFALL (see Flow; Weather)

Raja (see Skates)

Raja abyssicola
B68: 67

Raja binoculata
B68: 63

Raja diaphanes (see Skates)

Raja erinacea (see Skates)

Raja kincaidi
B68: 66

Raja laevis (see Skates)

Raja rhina
B68: 62

Raja scaberrata
S234

Raja stellulata
B68: 64

Rana sylvatica cantabrigensis
B94: 24

RANCIDITY
J7: 137, 237, 522; J9: 393

RANKIN, G. P.
C4: 107

RAT, ALBINO
J6: 63, 109; J7: 35, 74; J11: 58

RATFISH (*Hydrolagus colliei*)
B37: 148 (oil); B68: 71; B89: 342 (oil)
S13; S47; S53; S58; S81; S82

RATHBUN, MARY J.
AF10m

RAT-TAIL, COMMON (*Macrourus bairdi*)
S226

RAWSON, DONALD STRATHEARN
J2: 227; J8: 1, 207; J10: 224, 486
B42; B56; B72: 45, 69
S197

RAY, ELECTRIC
B68: 70

RAY, RAT-TAILED STING
B68: 68

RAYS (see also Elasmobranches; Skates)
AF12e

REACTIONS OF ANIMALS (see also Currents; Drugs; Flow; Light; Odours; Salinity; Sound; Taste; Temperature)
C7: 465 (to sound)
J10: 254 (to environmental conditions—phytoplankton)

S42 (olfactory sense—salmon); S51 (spinal reflexes—skate); S100 (adductor mechanism of *Pecten*); S207 (of fish out of water); S215 (to full moon—rainbow trout); S275 (to environment); S289 (to environment—Atlantic salmon); S356 (attracting and guiding Pacific salmon)

RECIPES FOR COOKING FISH

B20: 53

RECRUITMENT (TO A FISH STOCK)

J5: 43; J11: 559

RED DEVIL

B68: 184

RED SNAPPER (*see* Snapper, red)

REDDENING (*see* Discoloration)

REDDS

J11: 933 (salmon)

REDFISH (*Sebastes marinus*)

J10: 590; J11: 250

S235

NR4: 15

REDOX INDICATORS

J7: 567

REDUCTION (OF FISH OR OFFAL) (*see also* Oil, production of)

C1918-20: 125 (elasmobranchs)

B35, B36: 19 (pilchard); B39 (pollution); B47: 26 (herring)

REED, GUILFORD BEVIL

C2: 1; C4: 227, 257; C5: 103

J7: 217

B8

S96

REFLEXES (*see* Reaction)

REFRIGERATION (*see also* Freezing)

C1: 279; C7: 495; C8: 475

J7: 378; J8: 111

B11: 28; B20: 12; B24: 1; B44: 1; B49: 7

S156 (ice glaze); S309; S323; S324; S338 (jacket principle); S332

REGULATION (*see* Management)

REID, HELEN

C5: 457

REID, MARGARET E.

C4: 431

S6

Reinhardtius hippoglossoides

NS14: 11

Remilegia australis

B68: 329

Remora remora (*see* Sharksucker, blue)

REMPEL, JACOB GERHARD

J2: 209

REPRODUCTION (*see also* Physiology, reproduction)

C1901: 27 (*Mya*); C1915-16: 74 (oyster); C1918-20: 75 (muttonfish); C1921: 107 (Pacific herring); C1: 9 (lumpfish), 292 (Pacific fish); C2: 183 (shad), 439 (cunner); C3: 270 (spring salmon); C4: 19 (*Bankia*), 413 (*Littorina*), 440 (cunner), 443 (mackerel); C5: 33, 47 (sockeye), 361 (*Enchelyopus*), 451 (whitefish), 465 (pumpkinseed); C6: 165 (whitefish), 225 (cisco); C7 255 (bivalves), 325 (ciscoes); C8: 2 (Coregonidae), 20 (Hudson Bay fishes), 346 (sockeye), 421 (lobster)

J1: 1 (copepods), 159 (Atlantic salmon); J2: 209 (*Chironomus*), 223 (lobster), 311 (sockeye), 383 (pink salmon); J3: 339 (lobster), 403 (pink salmon); J4: 69 (rainbow trout), 96 (Atlantic salmon), 151, 210 (sockeye), 287 (oysters), 337 (*Zoarces*); J5: 71 (lobster), 84 (starfish), 105 (cod), 145 (*Cladocera*); J6: 37, 311 (Atlantic salmon), 140 (*Paphia*), 217 (pink salmon), 419 (*Themisto*); J7: 176 (lake trout), 224 (pink salmon), 363 (*Odontosyllis*), 417 (herring); J8: 134 (amphipods), 178, 453 (sockeye); J9: 1 (Arctic char), 42 (herring), 223 (zooplankton), 450 (pink and chum salmon); J10: 85 (*Micronereis*), 293 (coho), 326 (Arctic char), 413 (whitefish); J11: 1 (trout perch), 559 (related to density of stock)

B1: 14 (plaice); B2: 11 (lumpfish); B3: 9 (angler); B4: 10 (muttonfish); B5 (lobster); B17 (herring); B18: 3, B54: 17 (cod); B21: 6 (Atlantic salmon); B22: 15, B60: 6 (oysters); B25: 12 (haddock); B30: 11 (crabs); B50, B53: 2 (salmon, artificial); B56: 48 (whitefish); B64: 8 (smelt); B79: 4 (speckled trout); B84: 30 (Pacific salmon); B98: 10 (beluga)

S6 (*Sagitta elegans*—Bay of Fundy); **S12** (nudibranchs); **S72, S73** (clams); **S95** (ascidians); **S164** (lobsters); **S194** (pilchard); **S214** (trout—loss of weight); **S237** (kokanee and sockeye); **S272** (haddock); **S282, S288** (adequate number of adult Pacific salmon); **S289** (Atlantic salmon); **S294** (relation to recruitment); **S327, S343, S363** (B.C. herring)

NR2: 38 (Atlantic capelin); **NR7:** 30 (lobster); **NR9** (various trout); **NR14:** 87 (Atlantic cod); **NR15:** 13 (Atlantic spiny dogfish); **NR17:** 33 (Atlantic capelin)

NS15: 12 (lobster)

REPRODUCTIVE RATE
C1902-05: 2 (Infusoria)
J10: 211 (theory), 326 (Arctic char)
S29 (algae, as affected by colour of light)

RESPIRATION (*see* Physiology)

RETICULOSA (PROTOZOA)
PF1b

RHEOTAXIS (*see* Flow)

Rhamphocottus richardsoni
B68: 280

Rhinichthys cataractae (*see* Dace, longnose)

Rhinogobiops nicholsi
B68: 167

RICE, CHRISTINE E.
C4: 95, 227

RICE, F. A. H.
S273; S274

RICHARDS, JAMES FREDERICK
J7: 430

RICHARDSON, GORDON HOWARD
S350

Richardsonius balteatus (*see* Shiner, redside)

RICKER, WILLIAM EDWIN
J3: 363, 450; **J4:** 19, 33, 192; **J5:** 43, 293, 315; **J9:** 204; **J10:** 293; **J11:** 559
S125; S158; S167; S200; S208; S237; S295; S340; S359; S364; S381

RIDDELL, WILLIAM ANDREW
J2: 1, 463, 469, 473

RIGBY, MARGARET SOPHIA LAIRD
B28

RIGOR MORTIS
C3: 457
S38

RILEY, GORDON ARTHUR
J10: 211

Rimicola eigenmanni
B68: 335

RITCHIE, A. D.
S38; S52; S100

ROBERTSON, ALBERT DUNCAN
C1911-14(2): 95; **C1914-15:** 55

ROBERTSON, JAMES GRANT
J11: 624

ROBINSON, C. B.
C1902-05: 71

Roccus lineatus
S234

ROCKFISH, BANDED
B68: 229

ROCKFISH, BIG-EYED
B68: 222

ROCKFISH, BLACK
B68: 208; **B89:** 337 (oil)

ROCKFISH, BLACK-THROATED
B68: 219; **B89:** 337 (oil)

ROCKFISH, BROWN
B68: 223

ROCKFISH, COPPER
B68: 225; **B89:** 337 (oil)

ROCKFISH, GREEN-STRIPED
B68: 221

ROCKFISH, LOBE-JAWED
B68: 217

ROCKFISH, LONG-JAWED
B68: 215

ROCKFISH, OLIVE-BACKED
B68: 216

ROCKFISH, ORANGE (*Sebastodes pinniger*)
B59: 403 (oil); B68: 210; B89: 337 (oil)

ROCKFISH, ORANGE-SPOTTED (*Sebastodes maliger*)
B68: 226; B89: 337 (oil)
S59; S81; S82

ROCKFISH, RED-STRIPED
B68: 214

ROCKFISH, SPINY-CHEEKED
B68: 230

ROCKFISH, VERMILION
B68: 212

ROCKFISH, WILSON'S
C7: 323
B68: 213

ROCKFISH, YELLOW-STRIPED
B68: 227; B89: 337

ROCKFISH, YELLOW-TAILED
B68: 207

ROCKFISHES (*Sebastodes*)
C7: 323
J4: 472 (oil); J5: 148; J7: 35, 505, 513
(amino acid); J8: 76 (Maillard reaction)

ROCKLING, FOUR-BEARDED
C5: 109, 361
J11: 250
NS8: 28

ROGERS, HAROLD M.
J5: 164

RONQUIL
B68: 157

Ronquilus jordani
B68: 157

ROSE, ROBERT CHARLES
J10: 521

ROSEFISH (*see* Redfish) .

ROSS, R. A.
B10

ROTENONE (*see* Poisons)

ROTIFERA
C4: 77

RUDDER-FISH, BROWN
B68: 203

ROUND WHITEFISHES (*See* *Prosopium*)

ROUNDWORMS (*see* Nematoda)

RUMINANTS
S377 (stimulants for digestion by)

RUN-OFF (*see* Flow)

RUSTING
C1: 279 (herring)

RYERSON, C. G. S.
C1911-14(2): 165

S

SABLEFISH (*see* Blackcod)

SADLER, WILFRED
C1917-18: 181, 217; C1918-20: 103
B12

Sagitta elegans
S6 (reproduction—Bay of Fundy)

SAILOR-FISH
B68: 266

SAINT (*see* St.)

SALINITY (*see* Limnology; Oceanography;
Salinity, reactions to)

SALINITY, REACTIONS TO
C3: 149 (gastropods); C4: 9 (wood-borers);
C5: 109 (*Enchelyopus*), 475 (skate blood);
C8: 403 (plankton diatoms)
J2: 485 (lobster larvae); J4: 409 (Atlantic
salmon); J5: 84 (starfish), 253 (oysters);
J6: 399 (salmon parr), 498 (mudblister
worm); J8: 164 (chum and coho fry);
J9: 169 (brook trout), 377 (red halophiles),
388 (cod muscle)
B1: 19 (plaice); B5: 3 (lobster); B22: 15,
B34: 11 (oyster); B57: 49 (salmon)
S40 (marine animals); S45 (wood-borers);
S58 (dogfish); S78 (ascidians' digestion)

Salmo clarki (*see* Trout, cut-throat)

Salmo gairdneri, *S. irideus*, *S. kamloops* (*see*
Trout, rainbow)

Salmo salar (see Salmon, Atlantic)

Salmo trutta (see Trout, brown)

SALMON, ATLANTIC (*Salmo salar*) (BIOLOGY)

C1917-18: 149, 169; C3: 305

J1: 159; J2: 299, 379, 391, 499; J3: 169, 323; J4: 1, 48, 96, 323, 409, 441; J5: 172, 227, 440, 485; J6: 24, 37, 90, 311, 399; J7: 363, 432; J11: 255, 362, 933

B21; B32: 35; B51; B57; B58; B68: 93; B84: 23; B94: 6; B99

S41; S140; S165; S168; S173; S175; S187; S188; S192; S205; S223; S225; S234; S256; S259; S269; S270; S271; S275; S276; S280; S289; S291; S298; S329; S333

NR1; NR9; NR12; NR13

NS6: 12

SALMON, ATLANTIC (TECHNOLOGY)

J1: 179

SALMON, BLUEBACK (see Salmon, coho and sockeye)

SALMON, CHINOOK (see Salmon, spring)

SALMON, CHUM (*Oncorhynchus keta*) (BIOLOGY)

C1918-20: 22; C5: 32, 46

J8: 125, 164, 241; J9: 450; J10: 300, 523; J11: 63 (androgens), 69, 933

B14: 8; B31: 10; B68: 86; B90; B94: 6; B96

S129; S202

SALMON, COHO (*Oncorhynchus kisutch*) (BIOLOGY)

C1915-16: 39; C1918-20: 18; C3: 277; C4: 455; C5: 32, 46

J2: 463; J6: 158; J8: 67, 164, 241; J10: 293, 523; J11: 69, 310, 472, 590, 933

B14: 5; B15; B32: 42; B40; B65: 15; B68: 84; B84: 8; B94: 7

S148; S202; S231; S236; S263; S322

SALMON, DOG (see Salmon, chum)

SALMON, KING (see Salmon, spring)

SALMON, KOKANEE (see Kokanee)

SALMON, HUMPBACK (see Salmon, pink)

SALMON, LANDLOCKED (see Salmon, Atlantic)

SALMON, PACIFIC SPECIES (*Oncorhynchus*)

(BIOLOGY)

J9: 265 (temperature tolerance); J11: 126 (odour perception)

B84: 12 (Cowichan R.); B86 (Moricetown Falls); B93: 43 (eaten by seals); B101 (Babine R. slide)

S148 (eaten by marine fishes); S225 (migration); S287 (cultural problems); S288 (efficiency of natural propagation); S356 (high dams); S381 (transplantation to Atlantic); S383 (weir for); S391 (freshwater survival)

SALMON, PACIFIC SPECIES (TECHNOLOGY)

C7: 505, C8: 265 (oil)

J2: 431 (oil), 439, 469, 473; J3: 469; J4: 162; J5: 148, 244, 428 (oil); J6: 109 (oil), 119, 305; J7: 35, 51, 74, 137, 513, 522, 552; J8: 117; J10: 69

B37: 135, B59: 390, B89: 320 (oil)

S13; S81; S82; S162; S335; S375

SALMON, PINK (*Oncorhynchus gorbuscha*)

(BIOLOGY)

C1918-20: 20; C4: 455

J2: 383; J3: 403; J4: 141, 233; J6: 217, 392; J7: 224; J8: 241; J9: 450; J10: 300; J11: 588, 933

B14: 6; B31: 3; B66; B68: 82; B74; B90; B94: 6

S129; S148; S202; S232; S248; S257; S263; S268; S339

SALMON, RED (see Salmon, sockeye)

SALMON, SILVER (see Salmon, coho)

SALMON, SOCKEYE (*Oncorhynchus nerka*) (BIOLOGY) (see also Kokanee)

C1917-18: 32, 105; C1918-20: 12; C2: 151, 337; C3: 265; C4: 467; C5: 3, 37, 55; C8: 72, 345

J2: 311; J3: 26, 399, 421, 450, 469; J4: 151, 184, 192; J5: 136, 293, 315; J6: 267, 483; J7: 88; J8: 82, 103, 178, 453; J10: 314; J11: 69, 339, 988

B14: 3; B16; B26: 11; B27: 9; B32: 42; B50; B53; B55: 33; B56: 29; B68: 88; B94: 7

S42; S67; S77; S84; S90; S91; S92; S107; S113; S115; S118; S122; S124; S127; S129; S134; S144; S145; S179; S195; S202; S219; S233; S237; S248; S295; S328; S342; S362

SALMON, SPRING (*Oncorhynchus tshawytscha*)
C1915-16: 21; C1918-20: 7; C3: 265; C4:
455, 471

J6: 158; J10: 548; J11: 57, 310
B14: 5; B26: 3; B32: 41; B41; B65: 6;
B68: 85; B84: 6; B94: 7
S129; S202; S236; S263; S322

SALMON-LOUSE (*Lepeophtheirus*)

C1917-18: 171
J5: 172; J6: 24

Salpa, **SALPS** (*see* Thaliacea)

SALT, PRODUCTION AND COMPOSITION
NS7

SALT FISH, PRESERVATION AND SPOILAGE

J3: 70 (reddening), 439; J4: 136; J5: 249;
276, 287, 438 (discoloration), 411 (de-
naturation); J6: 1, 10, 17 (discoloration);
J7: 70, 430; J8: 325 (denaturation); J9:
157; 377 (discoloration), 388 (water
transfer); J11: 261 (discoloration); 901
(dun fungus on)
B29; B47: 22; B59: 425 (changes in oil)
NS4 (discoloration)

SALT FISH, PROCESSING

J6: 380
B6: 3 (lobster); B9: 10 (cod); B11: 24;
B19: 9 (mackerel)
S31 (strength of muscle)
NS1: 24 (Atlantic cod); NS7: 13 (types of
salt); NS9: 7 (Atlantic cod)

Salvelinus alpinus (*see* Char, Arctic)

Salvelinus fontinalis (*see* Char, speckled)

Salvelinus malma (*see* Char, Dolly Varden)

SAMBRO LIGHTSHIP

S358

SAMPLING BOTTLES (*see* Apparatus)

SAMPLING

J4: 19, J10: 238 (plankton)
B76 (for infestation of whitefish with
Triaenophorus)
S158 (plankton)

SANBORN, JOSEPH RAYMOND

S102; S114

SAND DAB (*see* Dab, sand)

SANDFISH
B68: 155

SAND-LAUNCE, ATLANTIC
S234
NR4: 15

SAND-LAUNCE, PACIFIC
B68: 159

SANITATION, OF BOATS AND PLANTS (*see also*
Sterilizing)
B12: 12; B20: 11; B49: 2; B100
NS9: 6

SAPONIFICATION (*see also* Oil, chemical
reactions)

J6: 103

Sarda sarda
S226

Sardinops caerulea (*see* Pilchard)

SARDINES (ATLANTIC WATERS) (*see also* Her-
ring, Atlantic)
C1917-18: 181; C1918-20: 103
J7: 62
S346; S349 (oil)

SARDINE, CALIFORNIA (*see* Pilchard)

Sarda lineolata
B68: 164

SARGASSUM FISH
S203

SARS, G. O.
C1911-14(2): 221

SASKATCHEWAN (*see also* individual localities)
J2: 209 (*Chironomus hyperboreus*)

SAUGER
B81: 3

SAUNDERS, LESLIE GALE
C8: 243
S69

SAUNDERS, J. W.
S384

SAURY, ATLANTIC
S234

SAURY, PACIFIC
B68: 123

SAWDUST (*see* Pollution)

SAWYER, WILLIAM REGINALD
C7: 73
S105

Saxidomus giganteus (*see* Clams, Pacific)

SCAD
B68: 161

SCAD, MACKEREL
S235

SCALES, FISH
C1914-15: 87 (hake), 95 (haddock), 103 (cod); C1915-16: 21 (spring salmon), 42 (coho); C1917-18: 109, C2: 151 (sockeye); C3: 431 (haddock); C4: 287 (cod), 471 (spring salmon); C5: 18, 75 (sockeye); C6: 282 (haddock); C8: 253 (Kamloops trout)
J4: 302 (brook trout); J5: 337 (*Prosopium*), 440 (Atlantic salmon); J6: 245 (rainbow trout); J7: 563 (amino acids in herring); J8: 245 (whitefish)
B1: 20 (plaice); B15: 8, B31: 4 (Pacific salmon); B21: 19 (Atlantic salmon); B25: 16 (haddock)
S157 (*Salmo*); S173 (Atlantic salmon); S263 (trout, etc.)
NR1: 18, NR13: 13 (Atlantic salmon); NR2: 28 (Atlantic capelin); NR6: 26 (haddock)

SCALLOPS
J11: 660
B75
S100

SCHIFFMAN, FRIEDEL S.
S284

SCHOOLING, (*see also* Migration)
J8: 241; J10: 523

SCHROEDER, W. C.
AF12d,e,f,

SCHULTZ, LEONARD PETER
C7: 319

Scomber scombrus (*see* Mackerel, Atlantic)

Scomberesox saurus
S234

Scorpaenichthys marmoratus
B68: 242

SCOTIAN SHELF
J7: 1; J10: 148, 155

SCOTT, DAVID MAXWELL
J10: 539; J11: 171, 894

SCOTT, FREDERICK HUGHES
C1901: 49

SCOTT, WILLIAM BEVERLEY
J11: 884

SCOTT, W. C. M.
C2: 129; C4: 137

SCULPIN, ARCTIC
J11: 248

SCULPIN, BLACK-FINNED
B68: 276

SCULPIN, BUFFALO
B68: 258

SCULPIN, CRESTED
B68: 246

SCULPIN, DARTER
B68: 263

SCULPIN, FILAMENTED
B68: 255

SCULPIN, FLUFFY
B68: 270

SCULPIN, GLOBE-HEADED
B68: 271

SCULPIN, GIANT MARBLED
B68: 242

SCULPIN, GREAT
B68: 259

SCULPIN, LESSER FILAMENTED
B68: 254

SCULPIN, LITTLE
S234

SCULPIN, LONG-FINNED
B68: 260

SCULPIN, LONGHORN
S234

SCULPIN, MANACLED
B68: 265

SCULPIN, MOSSY
B68: 272

SCULPIN, NORTHERN
B68: 253

SCULPIN, PADDED
B68: 249

SCULPIN, PLUMOSE
B68: 248

SCULPIN, PRICKLY (*Cottus asper*)
B55: 37; B56: 38

SCULPIN, PRICKLY (*Oligocottus rimensis*)
B68: 268

SCULPIN, RIBBED
B68: 262

SCULPIN, ROSY-LIPPED
B68: 274

SCULPIN, ROUGH-BACKED
B68: 252

SCULPIN, ROUGH-SPINED
B68: 261

SCULPIN, ROUND-NOSED
B68: 250

SCULPIN, SHARP-NOSED
B68: 273

SCULPIN, SMOOTH (*see* Cabezon)

SCULPIN, SOFT
B68: 279

SCULPIN, SPINY-HEADED
B68: 275

SCULPIN, STAGHORN
J11: 248

SCULPIN, TADPOLE
B68: 278

SCULPIN, TAYLOR'S
B68: 264

SCULPIN, TIDE-POOL
B68: 269

SCULPINS (*Myoxocephalus*)
C3: 443; C8: 275,
B73: 3
S17; S33; S34; S52; S234

SCYPHOZOA (*see* Jellyfish)

Scyhalina cerdale
B68: 198

SEA LICE (*see* Salmon-louse)

SEA-BASS, WHITE
B68: 145

SEA-LION, STELLER'S
C1917-18: 5
J11: 267 (parasites)
B59: 419 (oil); B85: 1; B89: 357 (oil)

SEA-URCHINS (*Echinoidea*)
C1901: 49
S116

SEAL OIL
J7: 471
B59: 418; B89: 355

SEALS, FUR
C1902-05: 30
J10: 560 (NE Japan); J11: 267 (parasites)
B85
S160

SEALS, HAIR, HARP, HOODED and RINGED
C1902-05: 30
J6: 420; J8: 189; J10: 539; J11: 246, 267
B85: 7; B93; B94: 25
S329

SEA-PERCH, BLUE
B68: 149
S81; S82

SEA-PERCH, BROWN
B68: 148

SEA-PERCH, DUSKY
B68: 151

SEA-PERCH, WALL-EYED
B68: 153

SEA-PERCH, WHITE (*Phanerodon furcatus*)
B68: 152
S81 (creatine); S82 (arginase)

SEA-POACHER, BLACK-FINNED
B68: 286

SEA-POACHER, BLACK-TIPPED
B68: 289

SEA-POACHER, DEEP-PITTED
B68: 288

SEA-POACHER, FOUR-HORNED
B68: 282

SEA-POACHER, PYGMY
J6: 30
B68: 287

SEA-POACHER, SMOOTH
B68: 292

SEA-POACHER, STURGEON-LIKE
B68: 284

SEA-POACHER, WARTY
B68: 283

SEA-POACHER, WINDOW-TAILED
B68: 285

SEARCHER
B68: 156

SEA-ROBIN (*Prionotus carolinus*)
S159 (Passamaquoddy Bay)

SEAWEED (*see* Algae, marine)

Sebastodes marinus (*see* Redfish)

Sebastodes alutus
B68: 215

Sebastodes caurinus (*see* Rockfish, copper)

Sebastodes dalli
B68: 223

Sebastodes diploproa
B68: 217

Sebastodes elongatus
B68: 221

Sebastodes flavidus
B68: 207

Sebastodes introniger (*see* Rockfish, black-throated)

Sebastodes maliger (*see* Rockfish, orange-spotted)

Sebastodes melanops (*see* Rockfish, black)

Sebastodes miniatus
B68: 212

Sebastodes mystinus
B68: 209

Sebastodes nebulosus (*see* Rockfish, yellow-striped)

Sebastodes nigrocinctus
B68: 229

Sebastodes paucispinis (*see* Bocaccio)

Sebastodes pinniger (*see* Rockfish, orange)

Sebastodes proriger
B68: 214

Sebastodes ruberrimus (*see* Snapper, red)

Sebastodes rubrivinctus
J11: 335

Sebastodes saxicola
B68: 216

Sebastodes wilsoni (*see* Rockfish, Wilson's)

Sebastodes zacentrus
B68: 222

Sebastolobus alascanus
B68: 230

SEDIMENTS
B88: 27 (Arctic)

SEDIMENTATION, OF STREAMS
J11: 362 (salmon survival)

Semotilus atromaculatus
S213

SEWAGE (*see* Pollution)

SEX RATIOS

C3: 489 (Canadian fishes); C5: 10, 39 (sockeye), 466 (sunfish); C8: 412 (haddock)
J3: 26 (sockeye), 131 (B.C. herring), 403 (pink salmon); J4: 194 (sockeye); J7: 231 (pink salmon); J9: 6 (Arctic char); J10: 418 (whitefish); J11: 1 (trout perch), 171 (yellowtail flounder), 988 (sockeye)
B25: 12 (haddock); B30: 10, B62: 29, B91: 20 (crabs); B64: 6 (smelt); B98: 12 (beluga)
S237 (kokanee and sockeye); S285, S327, S343 (B.C. herring); S90, S91, S92, S107, S113, S115, S118, S122, S134, S145, S179, S195, S219, S233, S328, S342, S362 (sockeye)
NR2: 49, NR17: 24 (Atlantic capelin); NR7: 12, NR16: 35 (lobster); NR15: 13 (Atlantic spiny dogfish)
NS15: 25 (lobster)

SEX REVERSAL

C7: 283 (oysters)
J5: 361 (oysters)
S93 (*Pandalus*)

SEXUAL MATURITY (see Maturity)**SHAD, AMERICAN**

C1902-05: 95; C2: 161
B68: 76; B89: 346 (oil)
S155; S226; S382

SHAND, JAMES ARTHUR

S376

SHANN, E. W.

C3: 341

SHANNY

J11: 248

SHANNY, RADIATED

S226

SHARK, BASKING

B68: 54; B89: 341 (oil)
S226; S235

SHARK, BLUE

B68: 58; B89: 341 (oil)

SHARK, BROWN

B68: 56; B89: 341 (oil)

SHARK, HAMMERHEAD

S226

SHARK, MACKEREL

C1901: 55
B68: 53; B89: 341 (oil)
S159

SHARK, PACIFIC MUD

B68: 52; B89: 341 (oil)
S13 (pentose); S35

SHARK, SLEEPER

B68: 60; B89: 341 (oil)
S329

SHARK, SOUP-FIN

B68: 57; B89: 340 (oil)

SHARK, SPOTTED COW

B68: 51; B89: 341 (oil)
B68: 55
S226

SHARKS (see also Dogfish; Elasmobranchs)**SHARKSUCKER, BLUE (*Remora remora*)**

S203; S226

SHELL, CRUSTACEAN

J10: 521 (lobster), 583 (crab)

SHELL, MOLLUSCAN

J6: 209 (oyster)

SHELLFISH, TOXICITY

J7: 490
B75

SHELTER, IN STREAMS

J11: 362 (and salmon survival)

SHINER, GOLDEN

S213 (L. Jesse)

SHINER, REDSIDE (*Richardsonius balteatus*)

B55: 36 (food); B56: 35 (life)
S144

SHINER, YELLOW (*Cymatogaster aggregatus*)

B68: 147

SHIPWORMS (MOLLUSCA)

C1917-18: 93; C4: 9, 19
J5: 8
B60: 70; B77: 12; B80
S19; S44; S45

SHOCK (PHYSICAL)
J6: 252

SHOEMAKER, CLARENCE RAYMOND
C3: 1; C5: 219

SHRIMPS (INCLUDING PRAWNS)
C6: 79; C8: 237
J4: 88; J5: 344; J7: 363
AF10m (Atlantic)
S4; S64; S93; S387

SHUSWAP L., B.C.
S197 (limnology)

SHUTT, FRANK THOMAS
C1901: 15, 17

Sicyogaster maeandricus
B68: 334

SIGURDSSON, G. JAKOB
J6: 45, 53

SILICA, SILICIC ACID (see also Limnology;
Oceanography)
C7: 119, 127
S121 (growth of phytoplankton)

SILVER
J7: 55

SILVERSIDE (*Menidia notata*)
S234

SIMPSON, WILLIAM WESLEY
C3: 437, 457
S34; S68; S119

SINCLAIR, R. J.
C4: 227

Siphostoma fuscum
S234

SIZE, OF FISH, ETC. (see also Growth rate;
Length-weight relationships; Weight of fish)
J1: 109 (bacillus), 213 (lobster); J2: 350
(lobster larvae), 359 (Kamloops trout),
379 (Atlantic salmon parr); J3: 108, 145
(B.C. herring), 403 (pink salmon); J5: 84
(starfish); J6: 222 (pink salmon), 228,
291 (lobster), 267 (sockeye), 281 (female
lobster), 428 (*Themisto*); J7: 186 (lake
trout); J8: 469 (ciscoes); J9: 169 (brook
trout); J10: 51 (Coregonidae), 307 (fresh-
water coho), 385 (lobster); J11: 171
yellowtail flounder), 904 (chars)

B1: 10 (plaice); B2: 18 (lumpfish); B3: 9
(angler); B4: 7 (muttonfish); B32: 19,
21, 29 (trout); 37 (Dolly Varden); B47:
31 (herring); B54: 21 (cod); B56: 44
(whitefish); B79: 4 (speckled trout);
B82: 4 (coregonines); B90: 16 (chum and
pink salmon); B93: 6 (seals); B98: 5
(beluga)
S35 (shark); S77 (sockeye); S85 (trout);
S116 (sea-urchin); S128, S183, S194,
S264 (pilchard); S142 (crab); S143
(*Rimicola*); S146 (herring); S161 (measur-
ing board); S248 (sockeye and pink sal-
mon); S249, S250 (rainbow trout); S262
(commercial clams); S270 (Ontario sal-
mon); S318 (speckled trout); S322
(composition of B.C. salmon); S336
(Greenland cod); S348 (beaked whales);
S352 (finback whales); S357 (L. Winnipeg
fishes); S285, S327, S343, S363 (B.C.
herring)
NR6: 12 (haddock); NR7: 7, NR16: 18,
NR18: 14 (lobster); NR13: 15 (Atlantic
salmon); NR14: 69 (Atlantic cod), NR17:
12 (Atlantic capelin)
NS2: 13, NS15: 25 (lobster)

SKATE, ATLANTIC PRICKLY (*Raja scaberrata*)
S234

SKATE, BIG
B68: 63
S234

SKATES, ATLANTIC
AF12e

SKATE, BLACK
B68: 66

SKATE, DEEP-SEA
B68: 67

SKATE, LONG-NOSED
B68: 62

SKATE, PACIFIC PRICKLY (*Raja stellulata*)
B68: 64

SKATE, WINTER (see Skate, big)

SKATES (PHYSIOLOGY AND TECHNOLOGY)
C1918-20: 125; C2: 129; C4: 117, 495,
501; C5: 475; C6: 315; C7: 1, 11, 17,
31, 439, 447, 477; C8: 139, 145, 207

J1: 179, 239, 251, 261, 497
B89: 343 (oil)
S17; S18; S33; S51; S81; S82; S99;
S101; S154

SKEENA R., B.C.

J8: 82 (limnology), 178 (climatology and
sockeye), 453 (sockeye)
B86 (salmon hazard); B93 (hair seals)
S287 (salmon)

SKIL-FISH, GIANT

B68: 241

SKIPJACK

B68: 164

SLASTENENKO, EFIM PETROVICH

J11: 652

SLEGGS, GEORGE FREDERICK

NR2

SMEDLEY, ENID MARY

C8: 169

SMELT, AMERICAN (*Osmerus mordax*)

J10: 539 (parasite); J11: 894
B70: 1; B94: 17
S41; S54; S234; S308

SMELT, BLACK (*see* Black smelt)

SMELT, LONG-FINNED (*Spirinchus dilatus*)
B64: 26; B68: 100

SMELT, SILVER (*see* Smelt, surf)

SMELT, SURF (*Hypomesus pretiosus*)
B64: 15; B68: 98

SMELTS (*see also* Capelin; Eulachon)

SMITH, GEORGE FRANCIS MAURICE
J5: 84; J6: 291
S149; S314

SMITH, GERTRUDE MAY
S64; S72; S73; S74

SMITH, LOUIS FALCONER
C7: 165

SMITH, MORDEN WHITNEY

J1: 67; J5: 138; J7: 22; J8: 340, 383
S137; S138; S159; S166; S185; S198;
S206; S213; S229; S242; S278; S311;
S318; S321; S341; S384; S385

SMITH, P. W. P.
S41

SMITH, VERA ZORA (*see also* Lucas, V. Z.)
J9: 16

SMOKING (FISH)

C1917-18: 175 (processing haddock), 179
(bacteriology of smoked haddock); C3:
469 (tensile strength of fish muscle);
C4: 27 (bactericidal action of smoke),
331 (tryptic hydrolysis of haddock muscle)
J3: 1 (preparing fillets); J6: 338 (deposition
of smoke on fish); J7: 70 (effect on
Clostridium)
B47: 21 (herring); B59: 425 (changes in oil)
S31 (tensile strength of haddock muscle);
S102 (decomposition); S135 (anemo-
meters)

SNAILS (*see* Gastropoda)

SNAPPER, RED (*Sebastodes ruberrimus*)

J7: 35, 505; J8: 76
B68: 220; B89: 337 (oil)
S81; S82

SNOW, JAMES MURRAY

J6: 403; J7: 561, 585, 594, 599; J8: 195, 309

Sockeye (*see* Salmon, sockeye)

SODIUM ACID PHOSPHATE
J5: 244

SODIUM NITRATE
J6: 233

SODIUM NITRITE
J5: 36, 148, 244, 265; J6: 63, 74, 233, 257,
414; J7: 101, 155, 221, 421, 461, 528,
536; J8: 195; J10: 69
B100: 34
S370

SOLE (*Solea vulgaris*)
S41: 31 (bacteria)

SOLE, BUTTER (*Isopsetta isolepis*)
B68: 322

SOLE, C-O (*Pleuronichthys coenosus*)
B68: 320

SOLE, CURL-FIN (*Pleuronichthys decurrens*)
J8: 375
B68: 319

SOLE, DOVER (*Microstomus pacificus*)
J8: 375
B68: 327

SOLE, FLAT-HEAD (*Hippoglossoides elassodon*)
B68: 315

SOLE, GREY (*see* Flounder, witch)

SOLE, LEMON—ATLANTIC (*Pseudopleuronectes dignabilis*)
NS14: 19

SOLE, LEMON—PACIFIC (*Parophrys vetulus*)
J7: 35, 51, 74; J10: 459
B68: 321

SOLE, REX (*Glyptocephalus sachirus*)
J8: 375
B68: 326

SOLE, ROCK (*Lepidopsetta bilineata*)
B68: 317
S202

SOLE, SAND (*Psettidichthys melanostictus*)
B68: 313

SOLE, SLENDER (*Lyopsetta exilis*)
J8: 375
B68: 314

SOLE, YELLOW-FIN (*Limanda aspera*)
B68: 323

Soles vulgaris
S41

SOLUBLES, CONDENSED FISH AND WHALE
J7: 563
S310; S377

Somniosus microcephalus (*see* Shark, sleeper)

SOOKE, B.C.
B31: 8, B40: 23, B74: 4 (tagging salmon)

SOUND, REACTION TO
J11: 130 (in fishes)

SOUTHCOTT, BURNETT ANNE
J10: 64
S310; S337

SPANISH FLAG (ROCKFISH)
J11: 335

SPARKS, M. IRVING
C2: 95; C4: 443

SPAT (*see* Oysters)

SPAWNING (*see* Redds; Reproduction)

SPEARFISH (*Makaira albida*)
S226

SPECIFIC GRAVITY
J4: 461 (herring); J8: 164 (salmon)

SPENCE, C. MARION
C4: 257

SPENCER, GEORGE JOHNSTON
B30

SPERM (FISH)
J8: 125

Sphyraena argentea
B68: 204

Sphyraena syagena
S226

Spirinchus dilatus (*see* Smelt, long-finned)

SPLEEN (*see* Morphology)

SPOLIAGE (*see also* Trimethylamine)
C1918-20: 99 (Atlantic fish), 103 (canned sardines); C1: 279 (cold storage); C3: 347 (haddock); C4: 95 (clams), 227 (haddock, lobster, clam); C5: 431 (haddock); C7: 139, 425 (halibut), 147 (haddock, etc.); C8: 275 (Atlantic fishes), 301 (haddock)
J1: 95 (effect of freezing), 109 (effect of temperature on cell shape); J3: 77 (cod); J4: 63, 252, 355, 412 (cod), 229 (N.S. fishes), 267 (bacteria); 327 (halibut, blackcod), 367 (cod, halibut); J5: 32, 121, 197, 203 (cod), 148 (Pacific fishes), 187 (bacteria), 244 (chum salmon), 265 (halibut); J6: 45, 53, 359, 403, 441, 491 (cod), 74, 194, 233, 243, 257, 349, 351 (bacteria), 119 (halibut, salmon); J7: 17, 101, 567 (bacteria), 62, 128, 370, 378, 421, 430, 449, 461, 528, 536, 580 (cod), 70 (lobster, cod, hake, pollock), 155 (germical ices), 221 (effect of bacteriostatic agents); J8: 111 (cod), 195 (bacteria); J9: 148 (cod); J10: 69 (halibut, lingcod, coho)

B8: 8 (lobster); B12: 10, B29, B49: 2 (halibut); B20: 11 (haddock); B100 (Atlantic fish)
S89 (halibut); S96 (effect of autolysis); S102 (cod, halibut, etc.); S156 (control by ice glaze); S209; S325 (B.C. herring); S337 (control by antibiotics); S370, S375 (role and control of microorganisms); S379 (*Lactobacillus*); S388 (bacteria)
NS1: 16 (dried codfish); NS4 ("pink" in salt codfish); NS12 (principles of food preservation); NS13 (canning)

SPONGES

S5

Sporendonema epizoum (see Mould)

SPOT, SILVER (*Blepsias cirrhosus*)

B68: 245

SPRING SALMON (see Salmon, spring)

SPROUT RIVER, B.C.

J11: 310 (salmon migration)

SPRULES, WILLIAM MEMBERRY

J9: 1

Squalus acanthias (see Dogfish, Atlantic spiny)

Squalus suckleyi (see Dogfish, Pacific spiny)

SQUARE L., ALTA.

B95: 28 (pike control)

SQUAWFISH, COLUMBIA (*Ptychocheilus oregonense*)

J5: 295, 315; J8: 103

B55: 34; B56: 35

S144

SQUIDS

C1906-10: 24

S104; S245

SQUIRES, HUBERT JACOB

S372

ST. ANDREWS, N.B. (see Passamaquoddy Bay)

ST. CROIX R., N.B.

C1906-10: 265 (flora); C1914-15: 151 (oceanography); C1915-16: 109 (geology)

ST. JOHN R. AND HARBOUR, N.B.

J4: 424 (oceanography)

B51 (return of salmon)

ST. LAWRENCE, GULF OF

C1914-15: 81 (herring disease); C1918-20: 109 (fish from Cape Breton and Magdalen Is.)

J1: 269 (lobster tagging); J2: 41 (lobsters); J8: 332, J10: 146 (oceanography); J11: 198 (oceanography, fisheries), 239 (plankton), 245 (fishes)

B13: 4 (Arctic ice); B43 (lobster); B61: 12 (cod)

S184 (*Poronotus triacanthus*); S284 (sea sunfish)

STAFFORD, JOSEPH

C1901: 19; C1902-05: 31, 91; C1906-10: 37, 45, 69, 221

STARFISH (ASTEROIDEA)

C1: 455

J5: 84; J11: 601

B22: 14; B48: 1; B60: 44

S13; S149

STAR-SNOUT, GRAY

B68: 290

STAR-SNOUT, SPINY-CHEEKED

B68: 291

STATISTICAL METHODS

S128 (pilchards); S158 (plankton sampling); S167 (fiducial limits—Poisson distribution); S303 (uses in scientific research)

STATISTICS (FISHERY)

C2: 161 (shad); C3: 307 (lobster, alewife), 423 (haddock); C5: 453, C6: 169 (whitefish)

J2: 129 (herring); J5: 43 (theory); J8: 184 (sockeye), 264 (Great Slave L. fishes), 281 (theory); J9: 450 (pink and chum salmon); J10: 1 (herring); J11: 5 (lake trout), 284 (whitefish)

B2: 25 (lumpfish); B3: 8 (angler); B18: 6 (cod); B21: 7 (Atlantic salmon); B22: 11 (Malpeque Bay oysters); B23: 6 (Ontario markets); B33: 27, B43: 5 (lobster); B36: 6, B38 (pilchard); B54: 6 (lingcod); B61: 4 (Atlantic cod); B62: 24 (crab); B67 (B.C. herring); B69: 10 (haddock); B72: 11 (Atlantic halibut); B90: 7 (chum and pink salmon); B91: 12 (crab)

S128 (pilchard); S188 (Atlantic salmon);

S230 (rainbow trout); S238 (clams);

S240, S285, S363 (Pacific herring); S258

(Canadian fisheries); S286 (B.C. clams); S288, S381 (Pacific salmon); S292 (North Sea after 1914-18); S293, S294, S296 (need for); S302 (pompano—California); S318, S321 (speckled trout, P.E.I.); S319 (nylon nets, L. Winnipeg); S339 (pink salmon); S341 (trout, Crecy L., N.B.); S354 (Atlantic fisheries); S389 (Pacific groundfishes); S392 (Pacific dogfish); S393 (B.C. whaling); S394 (blackcod fishery)
NR1: 11 (Atlantic salmon); NR11: 12 (lobster)
NS2: 11 (lobster)

STEELHEAD (*see* Trout, rainbow)

Stenodus leucichthys mackenziei (*see* Inconnu)

STERILIZING (*see also* Sanitation, of boats and plants)
J3: 100 (canned fish); J7: 55 (sea water)

STERN, JOSEPH AARON
J10: 590

STEVENSON, JAMES CAMERON
S285; S327; S343; S363; S378

STEVENSON, JOHN ALEXANDER
J3: 188; J11: 660

STEWART, BEATRICE J.
C8: 103

Stichaeus punctatus
J11: 249
B73: 9

STICKLEBACK, BROOK (*Eucalia inconstans*)
S144

STICKLEBACK, FOUR-SPINED (*Apeltes quadratus*)
S234

STICKLEBACK, NINE-SPINED (*Pungitius pungitius*)
S234

STICKLEBACK, THREE-SPINED (*Gasterosteus aculeatus*)
B68: 124
S144; S234

STICKLEBACKS
C1921: 149
B55: 36 (food); B72: 42; B94: 22

STICKWATER (PRESS LIQUOR)

C7: 165 (glue from)
J3: 177 (nitrogen); J7: 513, 563 (amino acids)
B35 (losses in effluent); B39 (effluent causing pollution)
S310, S325 (vitamin B₁₂); S332 (utilization);
S377 (stimulant for ruminant digestion)

Stizostedion canadense

B81: 3

Stizostedion vitreum (*see* Walleye)

STOCK, V.
C1911-14(1): 69

STOKES, JOHN WHITLEY
B101

STONEFLIES
C4: 157
J11: 543
S208

STORMS (*see* Weather)

STRAIT OF BELLE ISLE, NFLD.
C3: 179 (Entomostraca), 331 (Entomostraca and other plankton); C7: 203 (fishes)
J8: 134 (amphipods); J11: 198 (oceanography, fisheries), 239 (plankton), 245 (fishes), 431 (appendicularians)
B18 (cod)

STRAIT OF GEORGIA, B.C.
C2: 531 (Tintinnidae); C6: 65 (annelids)
J11: 501 (deep waters), 14, 799, 856 (tidal effects)
S80 (zooplankton); S112 (oceanography);
S376 (internal waves in)

STRAIT OF JUAN DE FUCA (*see* Juan de Fuca)

STRATIFICATION OF WATER (*see* Currents; Limnology; Oceanography)

Strongylocentrotus drobachiensis (*see* Sea-urchin)

STURGEON, GREEN
B68: 74

STURGEON, WHITE
B68: 73

STURGEONS
B7: 18 (insulin); B94: 5

SUCKER, COLUMBIA LARGE-SCALED (*Catostomus macrocheilus*)
 J3: 20
 B55: 33; B56: 32
 S144

SUCKER, FINE-SCALED (*see* Sucker, longnose)

SUCKER, LONGNOSE (*Catostomus catostomus*)
 B55: 33; B56: 32
 S144

SUCKER, WHITE (*Catostomus commersoni*)
 S140; S213; S281 (reactions to heat and light)

SUCKERS
 B72: 41; B94: 18

SUCTORIA (PROTOZOA)
 PF1g

SULLIVAN, CHARLOTTE MURDOCH
 J10: 187; J11: 153
 B77

SULPHA COMPOUNDS
 J7: 221

SULPHUR-CONTAINING PROTEINS
 J7: 51

SUNDERLAND, PETER ARNE
 J5: 36, 148, 244

SUNFISH, OCEAN (*Mola mola*)
 J11: 11
 B68: 330
 S284

SUNFISH, BANDED
 J11: 529

L. SUPERIOR, ONT.
 J9: 325 (temperature distribution)

SURVEYS (FISHERY)
 C1917-18: 5 (sea-lion); C1918-20: 85, 93 (plankton)
 J2: 95 (herring); J11: 198 (Gulf of St. Lawrence)
 B42 (Kamloops lakes); B56 (Okanagan lakes); B72 (Northwest Territories); B88 (Eastern Arctic seas); B94 (Arctic freshwater fishes)

S62 (fishes of Hudson Bay system); S123 (B.C. fiords); S137, S198, S213 (L. Jesse, N.S.); S163 (Jones L., B.C.); S197 (Shuswap L., B.C.); S206 (N.S. lakes); S234 (Malpeque Bay); S238 (B.C. clams); S290 (fishes collected from the Wm. J. Stewart)

SURVIVAL (*see* Mortality)

SWAIN, LYLE ALLOWAY
 J6: 113, 326; J7: 389
 B89
 S265

SWAN L., B.C.
 S224 (food of ducks and coots)

SWIMMING (*see* Cruising speed; Current, reaction to)

SWORDFISH
 B59: 404, B89: 343 (oil)

SYMBIOSIS
 C6: 13

SYMONS, JESSIE L.
 C1921: 1

Synchirus gilli
 B68: 265

Syngathus griseo-lineatus
 B68: 127

T

Tactostoma macropus
 B68: 109

Taeniotoca lateralis
 B68: 149

TAGGING AND MARKING
 C3: 265 (spring and sockeye salmon); C4: 453 (spring and coho salmon), 471 (spring salmon); C5: 80 (sockeye); C6: 263 (haddock); C8: 434 (Atlantic cod)
 J1: 269 (lobster); J2: 311 (sockeye), 391 (Atlantic salmon); J3: 27 (sockeye); J4: 1, 96 (Atlantic salmon), 184 (sockeye); J5: 84 (starfish), 176, 258 (brook trout); J6: 164 (B.C. pilchard), 245 (steelhead and rainbow trout), 291 (lobsters), 311 (Atlantic salmon), 483 (sockeye); J7: 88 (sockeye), 416 (B.C. herring); J8: 67 (goldfish and coho), 374 (B.C. bottom fish), 453 (sockeye), 479 (lemon sole); fish), 453 (sockeye), 479 (lemon sole); fish)

J10: 293 (coho), 377 (lobster), 459 (lemon sole); J11: 284 (whitefish), 351 (dogfish), 988 (sockeye)

B14, B31 (pink and chum salmon); B15, B40 (coho); B16 (sockeye); B21: 78, B50: 12, B99: 1 (Atlantic salmon); B26 (spring and coho salmon); B27 (spring salmon and other fish); B41 (spring salmon); B57: 32 (Margaree R. salmon); B62: 17 (Pacific crab); B64, B74 (pink salmon); B86: 7 (Moricetown Falls salmon); B91: 11 (crab); B96 (chum salmon); B98: 2 (beluga); B101 (Babine slide salmon)

S42 (sockeye); S129, S322 (Pacific salmon); S173 (salmon in Chamcook lakes, N.B.); S187, S192, S256, S280 (Atlantic salmon); S232 (spring and coho salmon); S268 (pink salmon); S308 (new tag for smelt); S171, S193, S221, S240, S247, S254, S260, S285, S327, S343, S363 (B.C. herring); S176, S196, S220, S239, S246, S253, S261 (pilchard)

NR8 (lobster); NR14: 9 (Atlantic cod)

TAIT, JOHN

S39

TAPEWORMS (see Cestoda)

Tarletonbeania crenularis

B68: 111

TARR, HUGH LEWIS AUBREY

J4: 327, 367; J5: 36, 148, 187, 211, 244, 265, 411; J6: 63, 74, 119, 233, 257, 303, 349; J7: 101, 137, 155, 221, 237, 513, 522, 552, 563, 608; J8: 74; J10: 64, 69, S209; S299; S310; S325; S332; S335; S337; S351; S360; S370; S373; S374; S375

TARTARIC ACID

J5: 122

TASTE, SENSE OF

J11: 107 (in fishes)

TATTERSALL, W. M.

C8: 181; J4: 281

TAUTOG (*Tautoga onitis*)

S159 (Passamaquoddy Bay)

Tautogolabrus adspersus (see Cunner)

TAYLOR, FREDERICK HENRY CARLYLE

J10: 560

TAYLOR, GEORGE W.

C1906-10: 187

TEDFORD L., N.S.

S206 (fishes); S229 (poisoning)

TEMPERATURE (see also Limnology; Oceanography; Temperature, reactions to)
C1: 413 (body temperature of fish)

TEMPERATURE, REACTIONS TO (see also Lethal limits)

C1901: 10 (survival without oxygen), 11 (rate of respiration); C1911-14(1): 73 (freezing mummichog); C2: 89 (lobster), 95 (marine animals); C4: 147 (angler—egg development), 422 (*Littorina*); C6: 176 (whitefish—spawning); C7: 45 (*Fundulus*—digestion), 447 (*Raja*—gastric motility); C8: 137 (*Raja* tissue), 145 (intestinal motility), 208 (*Raja* arteries), 253 (*Salmo* scales), 417 (haddock abundance), 434 (cod migration)

J2: 485 (lobster); J3: 169 (number of vertebrae), 421 (sockeye migration); J4: 287 (oyster), 323 (Atlantic salmon), 392 (herring); J5: 84 (starfish), 253 (oysters), 258, 461 (brook trout), 287 (mould), 485 (Atlantic salmon, brook trout); J6: 90 (salmon trout), 158 (coho, spring salmon), 217 (pink salmon), 449 (oysters), 476 (stream fishes); J7: 169 (goldfish), 490 (*Gonialax*); J8: 134 (amphipods), 189 (seal oil), 241 (Pacific salmon); J9: 169 (brook trout), 265 (*Oncorhynchus*); J10: 187 (brook trout), 196 (B.C. fishes), 253 (phytoplankton); J11: 153 (in fish), 362 (salmon survival)

B1: 19 (American plaice); B5: 3 (lobster); B18: 4 (cod); B22: 15, B34: 11 (oyster); B99 (salmon)

S33 (muscles and nerve tissue); S40 (marine animals); S45 (wood-borers); S78 (digestion of ascidians); S117 (cultured fish); S190 (herring vertebra); S217 (freshwater fish); S281 (common sucker)

NR2: 19 (Atlantic capelin); NR14: 98 (Atlantic cod)

TEMPLEMAN, WILFRED

C8: 421

J1: 213, 269; J2: 41, 223, 349, 485; J3: 339, 343; J5: 71; J6: 228, 281; J11: 11, 351, B43

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NR7; NR8; NR10; NR11; NR15; NR16; NR17; NR18

NS15

TENCH, EUROPEAN (*Tinca tinca*)
S144

TENSILE STRENGTH (OF FISH MUSCLE)
C3: 467
S31

Teredo nautilus (*see* Shipworms)

TERRITORIALISM
J8: 241

TESTER, ALBERT LEWIS
J3: 108, 145; J4: 461, 478; J7: 403
B47; B63; B65; B67
S146; S171; S190; S193; S221; S240;
S244; S247; S254; S260; S285

Tetranarce californica
B68: 70

Thaleichthys pacificus (*see* Eulachon)

THALIACEA (SALPS)
C1918-20: 93
S203; S226; S235 (Nova Scotia waters)

THANATOLOGY
S40

Themisto (*see* Amphipoda)

Theragra chalcogramma
B68: 130

THIAMINASE
J7: 94; J11: 529

THOMPSON, ANDREW
S306

THOMPSON, CHARLES
B92

THOMPSON, HAROLD
NR1; NR6; NR14
NS2

THOMPSON, HELEN G.
J5: 1

THREAD-FISH
B68: 122

Thunnus alalunga (*see* Albacore)

Thunnus thynnus (*see* Tuna, bluefin)

Thymallus signifer (*see* Grayling)

THYROID GLAND IN FISH
C2: 129; C4: 115
S223

TIBBO, SIMEON NOEL
NR16

TIDAL EFFECTS (*see* Currents; Flow)

Tinca tinca
S144

TINDALL, W. B.
C1918-20: 123

TOMCOD, ATLANTIC
S234
NS8: 22

TOMCOD, PACIFIC
B68: 131

TOMLINSON, R. V.
J8: 117

TOXICITY (*see* Poisons, general)

Trachypterus rex-salmonorum
B68: 139

TRANSGRESSIONS (*see* Currents)

TRANSPLANTATION (*see also* Culture; Hatcheries)
C1914-15: 119 (lobster)
J4: 141 (pink salmon)
B34: 23 (Japanese oyster)
S131 (brown trout); S132 (Japanese oyster);
S141 (pond culture); S381 (Pacific salmon);
S382 (shad, striped bass)

TRANSPORT, REFRIGERATED
S323

TREADWELL, AARON LOUIS
C7: 277
J3: 348
AF9b

TREMATODA
C1902-05: 91
J2: 335; J11: 267, 673, 954, 963

Triaenophorus (TAPEWORM)
 C7: 341, 377
 J6: 334; J7: 186; J8: 469; J11: 1
 B72: 39; B76; B95
 S180

TRIAMINEOXIDEASE
 J5: 187; J6: 368

Trichodon trichodon
 B68: 155

TRIGGERFISH (*Balistes capricornis*)
 S226

Triglops beani
 B68: 262

Triglops pingeli
 B73: 2

TRIMETHYLAMINE (see also Spoilage)
 J3: 77; J4: 63, 229, 252, 267, 327, 355, 367;
 J5: 121, 148, 187, 200, 203, 211; J6: 1,
 53, 194, 243, 303, 351 (test), 359, 368,
 403, 491; J7: 17, 128, 421, 449, 461, 528,
 536, 561, 567, 576 (test), 580; J8: 111,
 195, 309, 314; J9: 148
 S209

TRIMETHYLAMINE OXIDE (see also Trimethylamine)
 J8: 309 (test), 314 (content)

TROUT, BROOK (see Char, speckled)

TROUT, BROWN
 J3: 169; J5: 448
 B32: 36; B68: 90; B84: 21
 S131; S141; S144; S157; S263
 NR9
 NS6: 8

TROUT, CUT-THROAT
 C6: 391
 J3: 169; J5: 448; J8: 125; J10: 548; J11: 550
 B32: 28; B68: 89; B84: 20
 S85; S144; S148; S157; S252; S263

TROUT, EASTERN BROOK (see Char, speckled)

TROUT, GREAT LAKE (see Trout, lake)

TROUT, HYBRID
 B32: 35

TROUT, KAMLOOPS (see Trout, rainbow)

TROUT, LAKE (*Cristivomer namaycush*)
 J7: 176; J8: 207; J11: 5, 904
 B32: 39; B72: 37, 57, 78
 S144

TROUT, RAINBOW (*Salmo gairdneri*)
 C6: 391; C8: 253
 J2: 359; J3: 23, 169, 469; J4: 69; J5: 136,
 448; J6: 245; J8: 117, 125; J10: 548
 B32: 13; B42: 3; B56: 1, 29; B68: 92;
 B72: 90; B84: 14; B94: 7
 S85; S144; S157; S163; S214; S215; S230;
 S249; S250; S251; S263
 NR9
 NS6: 10

TROUT, ROCK (*Hexagrammus superciliatus*)
 S81 (creatine)

TROUT, SPECKLED (see Char, speckled)

TROUT, STEELHEAD (see Trout, rainbow)

TROUT-PERCH (*Percopsis omiscomayaeus*)
 J11: 1
 B94: 20

TRUSCOTT, BERYL
 J11: 355

TRUSS-NOUT
 B68: 126

TUBE-WORM (see Polychaeta)

TULLIBEEES (see Ciscoes)

TULLY, JOHN PATRICK
 J2: 477; J3: 43, 93; J4: 478; J5: 398; J8:
 378; J11: 853
 B83
 S172; S174; S177; S186; S189; S191;
 S241; S344; S345

TUNA, BLUEFIN
 B89: 343 (oil)
 S234

TUNAS (TECHNOLOGY)
 J3: 102 (canned paste); J4: 363 (histidine)

**TUNICATA (see Appendicularians; Ascidians;
 Thaliacea)**

TURBIDITY, REACTION TO
 J11: 362 (salmon survival)

TURTLES, MARINE
S372

TYROSINE
J4: 334; J6: 53

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UDVARDY, MIKLOS DEZSO FERENC
J11: 431

Ulvaria subbifurcata
S226

UNGAVA BAY

J9: 65 (*Calanus* expedition), 83 (fishes);
J11: 98 (list of Stations), 507 (Polychaeta),
709 (Amphipoda)
S329 (economic problems)

UNSAPONIFIABLES (*see also* Oil, other components)

J6: 326; J7: 389
B37: 45; B59: 83; B89: 84

Upogebia pugettensis
S169

UREA
C1918-20: 125, 134; C1: 401
J1: 497
S23; S119

Urophycis chuss (*see* Hake, squirrel)

Urophycis regius
NS8: 27

Urophycis tenuis (*see* Hake)

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VACHON, ALEXANDRE
C1917-18: 295

VAISEY, EDGAR BYRON
J11: 901

VAN HORNE, ADALINE
C1911-14(1): 47

VAN HORNE, MARY
C1911-14(1): 47

VANCOUVER ISLAND, B. C. (*see also* separate localities)

C1914-15: 119 (lobster); C1: 143 (Bryozoa),
219 (Hydromedusae); C3: 47 (Bryozoa);
C6: 23 (Cumacea), 65 (annelids), 397
(Ostracoda); C7: 221 (Cestoda); C8: 243
(freshwater amphipods)

J7: 403 (herring); J9: 16 (Ostracoda)
B14, B15, B26, B27, B31, B40, B41, B66
(tagging salmon); B17: 3 (waterfowl-herring);
B30 (crab); B39: 4 (pilchard pollution);
B47: 15 (location of herring);
B65: 4 (food of salmon); B84 (Cowichan R. game fish)

S11 (new heliozoon); S12, S49 (nudibranchiate Mollusca); S160 (fur seal food); S322 (troll-caught salmon); S285, S327, S343 (herring)

VANDENHEUVEL, FRANZ AIMÉ

J9: 129
S330; S331; S349; S350

VARIATION, MORPHOLOGICAL (*see also* Size)

J6: 30, 217, 245, 392; J7: 403; J8: 347;
J9: 169

VAUGHAN, ELIZABETH
S257

VELAR APPARATUS (*see* Morphology)

Venus mercenaria (*see* Quahaug)

VERTEBRAE (*see also* Age determination)

J3: 114 (herring), 169 (*Salmo*), 417 (capelin);
J5: 11, 347, 474 (herring), 105 (cod); J7:
403 (herring)
S120, S183 (pilchard); S146, S190 (herring)
NR14: 63 (Atlantic cod); NR17: 109 (Atlantic capelin)

VIABILITY (OF EGGS AND SPERM)

J8: 125

VIPERFISH (*Chauliodus sloanei*)
S226

VIPERFISH, FANGED (*Chauliodus macouni*)

J11: 502
B68: 107

VISCERA

J7: 563 (amino acids); J8: 111 (as feed stuff)
S310 (vitamin B₁₂)

VISCERA OIL

J4: 396 (halibut), 405 (Pacific cod), 472 (rockfish, blackcod, lingcod); J5: 428 (Pacific fishes)
B25: 27 (haddock); B37: 71 (B.C. fishes); B59: 222, B89: 198 (general)

VITAMINS A AND D

C6: 355 (pilchard oil); C7: 405 (lingcod liver oil); C8: 265 (salmon liver oil)
J2: 431 (canned salmon oil); J4: 174 (absorbed from oils by soaps), 312 (dogfish liver oil), 396 (halibut liver and intestinal oils), 405 (liver and intestinal oils of gray cod), 472 (liver and intestinal oils of red rockfish, blackcod and lingcod); J5: 428 (pilchard, herring, salmon and tullibee oil); J6: 103 (free and esterified), 113 (adsorption from liver oils); J11: 357 (in cod liver oil)
B37: 51, B59: 53, B89: 46 (oils); B46: 3 (pilchard oil)
S55, S86 (dogfish liver oil); S97 (pilchard oil); S162 (canned salmon); S265 (test)
NR15 (dogfish liver oil)
NS3: 20 (cod liver oil); NSS: 6 (dogfish liver oil)

VITAMINS, B-GROUP

J7: 74 (fish flesh); J9: 129 (cod liver and others), 161 (invertebrates); J10: 64 (herring meals); J11: 355 (B₁₂ in cod liver), 529 (diet destructive to B₁),
S310 (fish products); S325 (stickwater); S335 (salmon kidney, herring meal); S373 (herring meal supplement)

VLADYKOV, VADIM DMITROVICH

C8: 13, 409
J11: 535, 904
S154; S155

W**WAILES, GEORGE HERBERT**

C2: 507, 519, 531; C7: 213, 245
J1: 477
PF1a,b,c,d; PF1e; PF1f,g
S28; S76; S88; S98

WALDICHUK, MICHAEL

J11: 501

WALKER, EDMUND MURTON

C1911-14(2): 53
S200

WALKER, S. J.

C6: 472

WALLACE, N. A.

S1

WALLEYE, YELLOW (*Stizostedion vitreum*)

C3: 235
B72: 41, 79; B81: 1; B94: 20

WALLIS, JOHN BRAITHWAITE

C4: 221

WALRUS

B85: 3

WARDLE, ROBERT ARNOLD

C7: 221, 377; C8: 77
B45

WARREN ARTHUR EMERSON

J2: 89

WASHING (BERRIED LOBSTERS)

NR10; NR11: 29
NS15: 35

WASHINGTON, STATE OF, U.S.A.

B66, B74 (pink salmon)

WASKESIU L., SASK.

J7: 190 (pike)

WASTE (see Fishery products; Stickwater)**WATER ANALYSES (see Limnology; Oceanography; Pollution)****WATER CONTENT**

NS1: 31 (of dried codfish)

WATER HEIGHT (see Flow)**WATSON, DENNIS WALLACE**

J4: 219, 252, 267

WATSON, EDMUND EVELYN

J2: 141

WAVES, INTERNAL

S376

WEATHER

C1918-20: 29
J1: 121, 227; J2: 383; J3: 343; J5: 401;
J6: 476; J7: 447; J8: 1, 178, 332
B51: 15; B57: 29
S175; S306; S346; S358

WEIGHT OF FISH (see also Length-weight relationship; Size)
 B27: 1; B41: 8 (spring salmon); B31: 5 (pink salmon), 10 (chum salmon); B40: 11 (coho salmon); B81: 1 (L. Manitoba fish); B90: 16 (chum and pink salmon); B98: 5 (beluga); S54 (squirrel hake, pollack, winter flounder, smelt);
 S17, S90, S91, S92, S107, S113, S115, S118, S122, S134, S141, S179, S195, S219, S233, S328 (sockeye); S214 (loss at spawning time); S248 (sockeye and pink salmon); S250, S251 (rainbow trout); S285, S327, S343, S363 (B.C. herring); S318 (speckled trout)

NR15: 27 (Atlantic spiny dogfish); NR17: 124 (Atlantic capelin)

WEYMOUTH, FRANK WALTER
 J1: 191
 S142

WHALE, BEAKED (Atlantic) (*Mesoplodon densirostris*)
 S235

WHALE, BEAKED (Pacific) (*Berardius bairdi*)
 S348

WHALE, FINBACK (*Balaenoptera physalus*)
 S352

WHALE, WHITE (see Beluga)

WALES (see also individual species)
 C3: 501 (barnacles)
 J8: 275; J10: 320; J11: 319 (whale lice)
 B59: 413 (oil); B89: 347 (oil)
 S393 (B.C. industry)

WALE-SUCKER
 B68: 329

WHITE, FRANK DAVID
 C4: 1, 9, 19; C6: 341
 J2: 457, 461
 S59

WHITE, HARLEY CLIFFORD
 C2: 135; C3: 365; C5: 203;
 J2: 299, 379, 391, 499; J3: 323; J4: 1, 48, 309, 323, 337; J5: 172, 176, 258, 471;
 J6: 24, 37
 B58; B97
 S216

WHITE, H. T.
 C1911-14(2): 195

WHITE PERCH (see Perch, white)

WHITEAVES' CATALOGUE
 C1917-18: 229

WHITEFISH (see Lake whitefish; *Prosopium*)

WHITING
 B68: 130

WHITTAKER, E. J.
 C1917-18: 229

WICKETT, WILLIAM PERCY
 J11: 933
 S391

WILBY, GEORGE VAN
 J9: 141
 B54; B68
 S143; S160; S290

WILDER, DONALD GEORGE
 J8: 486; J9: 169; J10: 371

WILLEY, ARTHUR
 C1911-14(1): 1; C1914-15: 1; C1: 303
 C4: 527; C6: 483
 J6: 206
 S3; S5

WILLIAMSON, H. CHARLES
 C3: 265; C4: 453
 B26

WILMOT, ISOBEL
 J7: 430

WILSON, ANNA MARGARET
 NR5 (appendix)
 NS7: NS11

WILSON, CHARLES BRANCH
 C1906-10: 85
 J2: 355
 S2

WILSON, J. TUZO
 S306

WILTON, HELEN I.
 C4: 81

WILTON, MARGARET H.
C4: 81

WIND (see Weather)

WINDOWPANE (*Lophopsetta aquosa*)
J11: 954

L. WINNIPEG, MAN.
C1: 419 (fishes); C7: 177 (mayflies); C5: 382
(limnology); C5: 442 (whitefish)
J8: 469 (*Triaenophorus* and ciscoes); J11:
284 (whitefish)
S319 (nylon vs. cotton gill nets); S357
(fishes)

WISBY, WARREN JENSEN
J11: 472

WITHLER, FREDERICK CURTIS
B101

WODEHOUSE, ROGER PHILLIP
C1914-15: 103

WOLF-EEL
B68: 171

WOLFGANG, ROBERT WILLIAM
J11: 954, 963

WOOD, ALEX JAMES
J6: 45, 53, 194, 243; J7: 47

WOOD, ALBERT LEWIS
J6: 380

WOOD-BORERS, MARINE (see Griddle; Ship-
worms)

WRIGHT, ROBERT RAMSAY
C1902-05:1

WRYMOUTH (ATLANTIC) (*Cryptacanthodes*
maculatus)
S5

WRYMOUTH (PACIFIC) (*Delolepis giganteus*)
B68: 184

WYNNE, ARTHUR MARSHALL
C4: 317

WYNNE-EDWARDS, VERO COPNER
B72: 6, 21; B94

X

Xenopyxis latifrons
B68: 289

Xerces fucorum
B68: 181

Xiphias gladius (see Swordfish)

Xiphister mucosus
B68: 175

Xylotrya setacea (see Shipworms)

Y

Y-BLENNY
B68: 185

YOUNG, OTTO CHRISTIAN
C6: 417; C7: 495; C8: 475
S309; S323; S338

YUKON TERRITORY
B72: 5 (survey)

Z

Zanclorhynchus latipinnis
B68: 236

Zaprora silenus
B68: 198

ZIMMERMAN, HOWARD KARL, JR.
J10: 583

Zoarces anguillaris (see Eelpout)

APPENDIX

(Reprinted in large part from the 1953 Consolidated Annual Catalogue of Canadian Government Publications)

LIST OF PUBLICATIONS AND TITLES 1901-1954

DEALING WITH WORK OF THE FISHERIES RESEARCH BOARD OF CANADA (Formerly the Biological Board of Canada)

1. CONTRIBUTIONS

(a) CONTRIBUTIONS TO CANADIAN BIOLOGY

1901. pp. 1-62, 1901. 45¢.

1. Marine biological station of Canada. Introductory notes on its foundation, aims and work. By E. E. Prince, pp. 1-8.
2. The effects of polluted waters on fish life. A preliminary report. By A. P. Knight, pp. 9-18.
3. The clam fishery of Passamaquoddy bay. By J. Stafford, pp. 19-40.
4. Report on the flora of St. Andrews, N.B. By James Fowler, pp. 41-48.
5. Food of the sea urchin (*Strongylocentrotus dröbachiensis*). By F. H. Scott, pp. 49-54.
6. The paired fins of the mackerel shark. By E. E. Prince and A. H. MacKay, pp. 55-58.
7. Report on the sardine industry in relation to the Canadian herring fisheries. By B. Arthur Bensley, pp. 59-62.

1902-05. pp. 1-128, 1907. (*Out of print.*)

1. The plankton of eastern Nova Scotia waters. An account of floating organisms upon which young food-fishes mainly subsist. By R. Ramsay Wright, pp. 1-19.
2. The effects of dynamite explosions on fish life. A preliminary report. By A. P. Knight, pp. 21-30.
3. On the fauna of the Atlantic coast of Canada. An introductory report. By J. Stafford, pp. 31-36.
4. A further report upon the effects of sawdust on fish life. By A. P. Knight, pp. 37-54.
5. The Diatomaceae of Canso harbour, Nova Scotia. A provisional list. By A. H. MacKay, pp. 55-58.
6. Report on the flora of Canso, Nova Scotia. By James Fowler, pp. 59-70.

7. The seaweeds of Canso. Being a contribution to the study of eastern Nova Scotia algae. By C. B. Robinson, pp. 71-74.
8. Report on the marine Polyzoa of Canso, N.S. By George A. Cornish, pp. 75-80.
9. Notes on the fishes of Canso. By George A. Cornish, pp. 81-90.
10. Preliminary report on the Trematodes of Canadian marine fishes. By J. Stafford, pp. 91-94.
11. The eggs and early life-history of the herring, gaspereau, shad and other clupeoids. By Edward E. Prince, pp. 95-110.
12. Sawdust and fish life. Final report. By A. P. Knight, pp. 111-120.
13. Professor Macallum on the chemistry of Medusae. A condensed resume of results. By Edward E. Prince, pp. 121-128.

1906-10. pp. 1-305, 1912. \$2.25.

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67. Catch statistics of the British Columbia herring fishery to 1943-44. By A. L. Tester, pp. 1-67, 1945. 45¢.
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87. List of publications of the Fisheries Research Board of Canada (formerly the Biological Board of Canada), 1901-1949. Pp. 1-96, 1950. Free.
88. Eastern Arctic waters. By M. J. Dunbar, pp. 1-131, 1951. \$1.00.
89. Marine oils, with particular reference to those of Canada. Edited by B. E. Bailey; revised from Bulletin 59, with the editorial assistance of N. M. Carter and L. A. Swain; pp. 1-413, 1952; \$3.00 paper bound; 4.00 cloth bound.
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10e. Cirripedia. By Ira E. Cornwall, pp. 1-49, 1955. 50¢.

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1. The Isopoda of the Bay of Fundy. By N. A. Wallace. *University of Toronto Studies, Biological Series*, No. 18, pp. 1-42, 1919.
2. Argulidae from the Shubenacadie River, Nova Scotia. By Charles Branch Wilson. *Canadian Field-Naturalist*, Vol. 34, No. 8, pp. 149-151, 1920.
3. Arctic Copepoda in Passamaquoddy Bay. By A. Willey. *Proceedings of the American Academy of Arts and Sciences*, Vol. 56, No. 5, pp. 185-196, 1921.
4. A new species of *Spirontocaris* with notes on other species from the Atlantic coast. By A. H. Leim. *Transactions of the Royal Canadian Institute*, Vol. 13, pp. 133-145, 1921.
5. Faunal notes from the Atlantic Biological Station (1920). By A. Willey and A. G. Huntsman. *Canadian Field-Naturalist*, Vol. 35, No. 1, pp. 1-7, 1921.
6. The success of reproduction in *Sagitta elegans* in the Bay of Fundy and the Gulf of St. Lawrence. By A. G. Huntsman and Margaret E. Reid. *Transactions of the Royal Canadian Institute*, Vol. 13, Pt. 2, pp. 99-112, 1921.
7. A further study of the respiratory processes in *Mya arenaria* and other marine Mollusca. By J. B. Collip. *Journal of Biological Chemistry*, Vol. 49, No. 2, pp. 297-310, 1921.
8. Retinal reflexes of narcotized animals to sudden changes of intensity of illumination. By A. T. Cameron and C. H. O'Donoghue. *Biological Bulletin*, Vol. 42, No. 5, pp. 217-233, 1922.
9. A new *Cyclocypris* from eastern Canada. By A. Brooker Klugh. *Transactions of the Royal Canadian Institute*, Vol. 14, pp. 337-342, 1923.
10. On the occurrence of manganese in the tube and tissues of *Mesochaetopterus taylori* Potts, and in the tube of *Chaetopterus variopedatus* Renier. By Cyril Berkeley. *Biochemical Journal*, Vol. 16, No. 1, pp. 70-77, 1922.
11. On a new heliozoon from Vancouver Island. By Chas. H. O'Donoghue. *Canadian Field-Naturalist*, Vol. 35, No. 6, pp. 101-102, 1921.
12. Notes on the nudibranchiate Mollusca from the Vancouver Island region I. Colour variations. By Chas. H. O'Donoghue. II. The spawn of certain species. By Chas. H. O'Donoghue and Elsie O'Donoghue. III. Records of species and distribution. By Chas. H. O'Donoghue. *Transactions of the Royal Canadian Institute*, Vol. 14, pp. 123-166, 1922.
13. On pentose compounds in tissues of marine animals. By Cyril Berkeley. *Transactions of the Royal Society of Canada*, Ser. III, Vol. 15, Sect. V, pp. 41-47, 1921.

14. An organic constituent of the tube of *Mesochaetopterus taylori* Potts. By C. Berkeley. *Journal of Biological Chemistry*, Vol. 50, No. 1, pp. 113-120, 1922.
15. The rate of growth of the sea mussel (*Mytilus edulis* L.) at St. Andrews, New Brunswick; Digby, Nova Scotia; and in Hudson Bay. By Bessie K. E. Mossop. *Transactions of the Royal Canadian Institute*, Vol. 14, pp. 3-22, 1922.
16. On the crystalline style as a possible factor in the anaerobic respiration of certain marine mollusks. By C. Berkeley. *Journal of Experimental Zoology*, Vol. 37, No. 5, pp. 477-488, 1923.
17. The source of insulin. A study of the effect produced on blood sugar by extracts of the pancreas and principal islets of fishes. By J. J. R. Macleod. *Journal of Metabolic Research*, Vol. 2, pp. 149-172, 1922.
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25. Quantitative studies concerning the distribution of arginase in fishes and other animals. By Andrew Hunter and James A. Dauphinee. *Proceedings of the Royal Society [London]*, B, Vol. 97, pp. 227-242, 1925.
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